INDUSTRIAL EQUIPMENT NEWS

MAY - 1951
VOL. 19 • NO. 5

The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

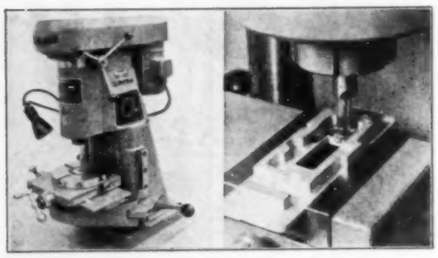
BREVITY—Identify by IEN-4373 if you write the maker

MILLING . . Eccentric head machine cuts multiple sides in predrilled holes

Source: GUBELIN INTERNATIONAL CORP.
35 W. 53rd St., Fifth Floor, New York 19, N. Y.

Square or hexagon openings are produced by three-lip or five-lip cutters mounted in the eccentrically-controlled spindle of this new Swisma milling machine. Operation starts in a predrilled or bored hole of correct diameter to enclose the multi-sided opening. The spindle is adjusted to the desired dimension by turning a wrench that is entered through an opening in one side of the head for square contour or a similar opening on the opposite side for hexagon shape.

Hexagon faces can be flat as shown in one of the views in the first illustration. They can be made concave inward as shown in the other hexagon view to present flat areas against which a wrench can apply as in a hexagon head screw.



In addition to cutting symmetrical openings, the machine applies in die and tool making to follow straight lines making up the contours of the tool. In all cases the radius at a corner will be about 1/10 of the length of a flat face, based on a symmetrical square or hexagon. The machine employs a fluted cutter, one tooth of which is cutting at a given instant. A cutter for a square opening will have three flutes. One for hexagon openings will employ five or one less flute than the number of faces in each case.

Capacities range from 5/32 to 1 in. in hole-size widths across the flats. Hole depth can be twice this width in square holes to $\frac{9}{16}$ in. across the flats or in hexagon holes to 33/64 in. across the flats. Depth can be to the hole capacity of the machine which is $1\frac{3}{16}$ in. for square holes over $\frac{9}{16}$ in., or hexagon holes to ½ in. across the flats. Throat dimension is 4¾ inches. Maximum distance between the table and the tool end is 7½ inches.

BREVITY—Identify by IEN-4374 if you write the maker

LUBRICATING . . Wax base liquid for metal forming and machining

Source: S. C. JOHNSON & SON INC.
1523-27 Howe St., Racine, Wis.

Company will make recommendation

The company has developed three new wax-base liquids. One is for use in forming shallow stainless-steel shapes and to perform sharp draws where heat is generated. A second is for deep drawing as in automobile fenders. The third is a wax-emulsion coolant for use in milling, boring, drilling.

Birthday Number 18

Our birthday is important for its indication of further specialized experience and improving facilities in another year of development of the product information reporting service originated by Industrial Equipment News in 1933 . . . to keep you posted each month on "What's New" in industrial products. We count this as an opportunity to thank you sincerely for your interest and use of the service because that is what makes its continuation and further development possible.

BREVITY—Identify by IEN-4375 if you write the maker

SPRAYING . . Twin nozzle gun handles quick curing laminating resins

Source: SCHORI PROCESS DIVISION
8-13 43rd Road, Long Island City 1, N. Y.

Separate supplies of polyester resin, one containing catalyst and the other containing accelerator, connect to separate intake valves on the sides of this new gun. The separate solutions pass through the gun for spray delivery at the two gun nozzles. Mixing does not take place until the sprays meet in front of the gun on their way to a work surface. This makes it possible to prevent start of curing so the separate solutions will remain liquid in their respective supply containers, the resin-catalyst blend for at least one working day and the resin-accelerator blend for considerably longer.

Gelation takes place in about 3 min. or less at 70 deg. F. in the spray deposit on the work surface. Final curing is after an interval of several additional minutes, depending upon the proportions of catalyst and accelerator in the initial resin mixes.

The gun operates on a minimum line pressure of 70 lb. of compressed air and takes about 15 cfm. Marco resin formulations, especially developed for use with the gun, are available from the company. Air pressure connects at the base of the gun housing. Control centers at a lever-type trigger.

BREVITY—Identify by IEN-4376 if you write the maker

BISMUTH . . Ductile extruded wire for instrument use, .003 to .039 inch

Source: FITZPATRICK ELECTRIC SUPPLY CO.
442-46 Irwin St., Muskegon, Mich.

20 page booklet presents details

Resistance change in a magnetic field and voltage change due to Hall effect are the principle characteristics of bismuth in its metallic form. Both can be applied now through the company's ability to supply extruded bismuth in wire form. The wire is sufficiently ductile to wind on its own diameter at room temperature and has strength to permit handling with due care. It is available in bare form in four diameters between .003 and .039 in. with list price at 55 cents per foot. A ribbon is available, ¼ by .0047 in., at $2.50 per foot.

BREVITY—Identify by IEN-4377 if you write the maker

WEIGHING . . Scale attachment for direct reading on beam scales

Source: HOWE SCALE CO.
1041 Strongs Ave., Rutland, Vt.

Weightograph No. 77 is a new direct-reading attachment to assemble on a beam scale and convert it to provide an immediate reading at eye level on an illuminated strip chart. Application can be made on any standard make of beam scale with connection between attachment and the beam end.

Upward movement of the beam, when a weight is imposed, operates a rocker arm in the attachment housing to transmit movement to a counterweighted arm carrying a strip-chart scale. The motion changes position of the scale between a stationary light and magnifying lamp to project the reading upward by means of mirrors to the screen where the figures appear in line with a stationary point. The light source is a prefocused projection lamp with a bayonet lock in an assembly that prevents substitution of an incorrect lamp. The magnifying lamp provides an effective reading length of the chart of 180 in. or 15 feet. Illumination is magnified about 5 times to provide a clear indication.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 96 and 97 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

•

From a Consulting Engineer

"At present am using a half dozen items first noted in Industrial Equipment News on an important defense job. One order in a single size will amount to $3,000."

•

Departments

READER SERVICE FORM — Pages 16-17 and 96-97
To assist you in securing the information you want

SUBJECT INDEX — Page 110
Products and services listed by names and by function

SINCE MAY OF 1933 — Page 4
Review of IEN's service and its offer of help to you

NEWS NOTES — Page 24
Concerning unusually helpful literature and services

NEW LITERATURE — Page 76
Condensed listings of current manufacturers' catalogs

"I WISH I HAD" — Page 112
Requests we cannot answer, printed in the hope you can

•

Our Selections in This Issue

CONSTRUCTION — Page 3
Diesel hammer to drive piles has 4 foot power stroke

CONVEYING — Page 25
Proposed belt assembly to carry passengers at 15 mph.

COOLING — Page 8
Heat exchanger for coolants, lubricants, hydraulic oil

DRIVE — Page 64
Mechanical load brake controls lowering on a crane

HANDLING — Page 89
Pipe unloader operates between car, ground and storage

HEATING — Page 2
Infra-red lamp designed to apply in a cooking stove

HEATING — Page 70
Induction equipment heats aluminum to forge or extrude

LUBRICATING — Page 5
Molybdenum base grease for extreme pressure surfaces

MANAGEMENT — Page 28
Financial report for employees in understandable manner

MOTORS — Page 30
Film and booklets on how to select and apply motors

RELAY — Page 47
Alternates control to two circuits of duplicate equipment

TESTING — Page 52
Sonic meter reads resonant frequency in a solid mass

TESTING — Page 71
Electronic detector uses halogen to find a vacuum leak

W. E. Smith, Editor & V. Pres.
F. Morse Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

FILL IN AND SEND ALONG TO OTHERS INTERESTED IN PRODUCT INFORMATION

- ☐ Plant Operating Mr. .....
- ☐ Production Mr. .....
- ☐ Engineering Mr. .....
- ☐ Product Design Mr. .....
- ☐ Purchasing Mr. .....
- ☐ .....

BREVITY—Identify by IEN - 4378 If you write the maker

NEW DEPARTURE, true to its name, is noted for original, *practical* thinking.

This thinking, applied to the fundamental fact that "Nothing Rolls Like a Ball"—and materialized in tough, enduring steel—has licked friction and wear wherever shafts turn.

In literally thousands of applications, New Departure *Ball* Bearings are solving today's knottiest problems of higher speeds, heavier loads and greater rigidity. . . . Perhaps they will solve yours, too.

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • Division of General Motors • Bristol, Connecticut

BREVITY—Identify by IEN - 4379 If you write the maker

FREE! 32-PAGE HANDBOOK
SHOWS HOW TO STOP CONDENSATION DRIP

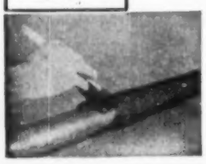
NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.



HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.
Technical Coatings Since 1895
Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 4380 If you write the maker

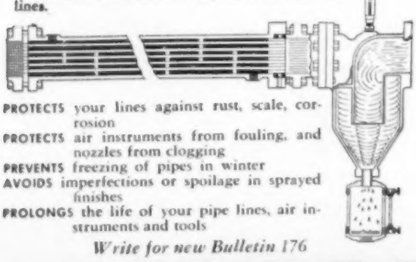
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

• Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

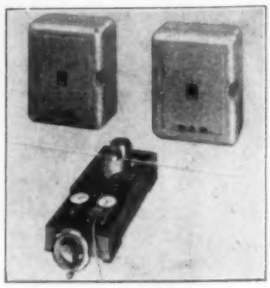
Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 4381 If you write the maker

GAGE . . Electronic equipment controls speed of extruding operation

Source: FEDERAL PRODUCTS CORP.
1140 Eddy St., Providence 1, R. I.



Model 493, B-80, is new assembly of the company's Electricator dial-indicator gage and associated controls to regulate the speed of wire passing through an extruding operation in which plastic insulation is applied on the wire. Actuation is by the coated wire which passes between stationary and floating roller heads in the gaging element. Resulting movements at the gage spindle are transmitted electrically to one of the two control housings. Average outside diameter of the coating is determined and a corresponding impulse is sent to the second housing.

The mechanism in this second housing controls operating speed at the extruding machine to hold uniform the deposit of plastic on the wire. The equipment applies on coating diameters to 1 inch. It automatically damps out incidental irregularities so they do not affect the extruding action. The dial indicator gage, in addition to the Electricator unit, is employed for initial set-up. Signal lights indicate over or under size.

BREVITY—Identify by IEN - 4382 If you write the maker

HEATING . . Infrared lamp designed to apply in a cooking stove

Source: SYLVANIA ELECTRIC PRODUCTS INC.
1740 Broadway, 16th Floor, New York 19, N. Y.

Production has been started on a new sealed-beam reflector-equipped infra-red lamp. The unit is now available as a component part and replacement unit for cooking stoves. It mounts base down beneath a flat top made of Vycor 96-per-cent silica glass. It rates 1,250 watts and is designed for operation on 230-volt input. It employs a two-section tungsten filament which operates at approximately 2,400 deg. C. at full wattage.

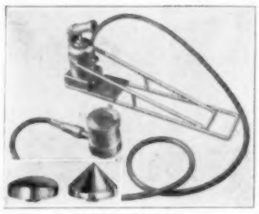
The flat red Vycor top plate is comparable to the stove lid on a coal range. It provides a flat top on which to place small utensils. It also absorbs about 98 per cent of the visible light to leave only a red glow. It seals against cooking spillage although this would not affect operation of the lamp itself or cause any excessive thermal strain. About 60 per cent of the lamp's energy is transmitted as radiant. The remainder is absorbed by the plate and transmitted to a utensil by conduction and convection. The lamp is gas filled and is designed to operate at about atmospheric pressure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4383 If you write the maker

A PAID NEWS ADVERTISEMENT BY THE DUFF-NORTON MANUFACTURING COMPANY

"LO-HITE" JACK . . . Hydraulic Unit for heavy lifting in confined areas



For use where confined spaces limit operation of a conventional lifting jack, Duff-Norton has developed the "Lo-Hite" Jack. An independent pump connected to the jack by a length of hose permits jack operation from the ground or any convenient plane.

With its closed height of only 4½", this jack will lift a 30-ton load 2". For versatility in jacking operations it is furnished with interchangeable pointed and radius tops, which are heat-treated to assure long service life.

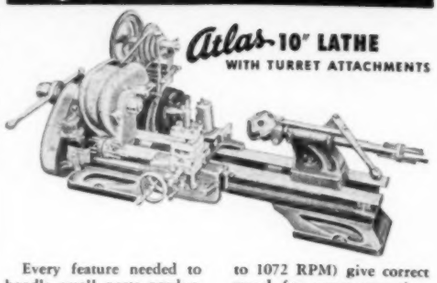
Hydraulic oil in the "Lo-Hite" Jack is contained in a separate chamber independent from the jacking unit. This feature permits operation of the jack in horizontal, vertical, inverted or inclined positions. When not in use the "Lo-Hite" Jack folds into a compact, easy-to-carry unit.

Because this Jack operates efficiently wherever space limitations exist, it has many applications in the construction, marine and general industrial fields. When requesting prices and additional information, specify Model 30-H-4.5.

THE DUFF-NORTON MANUFACTURING CO.
Pittsburgh 30, Pa.

BREVITY—Identify by IEN - 4384 If you write the maker

LOWEST COST SEMI-AUTOMATIC TURRET LATHE



Every feature needed to handle small parts production *quickly* and *economically* is provided by this Atlas 10" lathe with turret attachments. It's the ideal low-cost solution to today's small parts production problems.

Headstock spindle is Timken roller bearing equipped to stand up through round-the-clock production runs. Heaviest back gears of any 10" lathe permits *heavier cuts*. 16 spindle speeds (28 to 1072 RPM) give correct speed for every operation. Complete V-belt drive. Spindle hole takes stock up to 15/16".

See how this rugged, precision-built Atlas can save you money on small part production runs. Send for latest catalog with complete details.

Atlas Press Co.
661 N. PITCHER ST.
KALAMAZOO, MICHIGAN

MATCHED PRECISION TOOLS FOR WOODWORKING AND METALWORKING

BREVITY—Identify by IEN - 4385 If you write the maker

DEADLY TO FIRE!

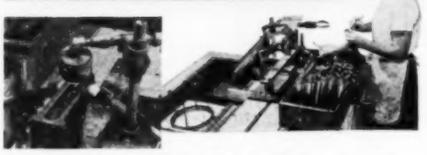
Fire? Just pull the trigger of a Kidde CO_2 portable extinguisher...and it's out before it gets a chance to spread. Write for free literature.

Walter Kidde & Company, Inc.
536 Main St., Belleville 9, N. J.

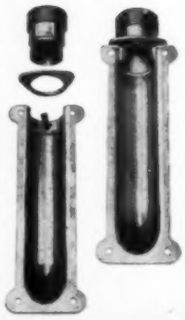
Kidde

BREVITY—Identify by IEN - 4386 If you write the maker

FOR FAST, EASY, LOW-COST BRAZING you can't beat EASY-FLO



Here's a good example — a gas meter part. With the simple set-up above, working two 8-hour shifts, one girl per shift, output averages 2600 a week — and manufacturer says this could easily be increased. This is how it's done. Operator takes parts from cleaning bath — assembles them on positioning fixture with half-ring of EASY-FLO wire (arrow) *preplaced* — applies flux — places assembly on brazing fixture and moves it into position under gas-air burners. Heating is automatically timed. While assemblies are heating others are prepared. At right is a finished part.

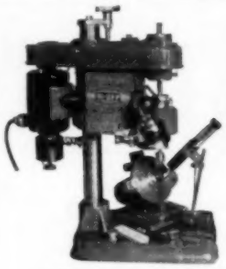


WRITE FOR BULLETIN 20

It gives the whole EASY-FLO story plus a lot of valuable brazing information.

HANDY & HARMAN 82 Fulton St. New York 38, N. Y.

BREVITY—Identify by IEN - 4387 if you write the maker



Taylor

HI-EFF

PRECISION DRILLING MACHINES

Always Look for The FACTS THAT COUNT!

• Here are seven significant facts . . . They represent "HI-EFF" quality features for sensitive, precision drilling. Write for Bulletin 752.

1. Spindle and chuck run-out .0001".
2. Vaporized lubrication of bearings.
3. Spindle supported by 4 select, precision bearings—other moving parts precisely ground and lapped.
4. Solid column for maximum rigidity.
5. Variable speed—800 to 40,000 R.P.M.
6. Radial positioning of drill head.
7. Counter-balanced spindle affords sensitive, feather-touch feed.

Dynamometers • Static Balancers • Precision Drilling Machines

TAYLOR DYNAMOMETER & MACHINE CO.
528 N. WEST HIGHLAND AVE. • MILWAUKEE 3, WIS.

BREVITY—Identify by IEN - 4388 if you write the maker

a good appliance deserves the BEST CORD

SECURITYFLEX
portable cord

Tough, dependable — resistant to oil, water, abrasion, age, ozone—SECURITYFLEX* Portable Cord is a reliable partner for any electrical appliance. So rugged it's used on mine drills.

Resists kinking. Flexes indefinitely. Don't risk your product's performance by using poor cord. SECURITYFLEX is made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

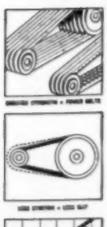
the right cable for the job

ANACONDA® Wire and Cable

BREVITY—Identify by IEN - 4389 if you write the maker

BROWNING STEEL CABLE GRIPBELTS

MORE *Strength* • LESS *Stretch*



Browning Steel Cable Gripbelts are much stronger than ordinary belts. They will safely carry heavier loads with fewer belts. They will stretch less and give longer life without loss of power and efficiency.

Write FOR LIST PRICE SHEET V-163-A

BROWNING MANUFACTURING CO.
INCORPORATED
MAYSVILLE, KENTUCKY

BREVITY—Identify by IEN - 4390 if you write the maker

CONSTRUCTION . . Diesel hammer to drive piles, has 4 ft. power stroke

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

Model 1417 is a new self-contained diesel pile hammer employing a ram that weighs 5,400 lb. and operates in a cylinder through 48-in. power stroke. The ram is lifted to the top of its stroke to start the hammer and is released to drop by gravity. Prior to reaching the bottom it engages a cam-operated fuel pump and a pre-determined amount of fuel is injected into the combustion space remaining between ram and anvil. Continued downward movement compresses the air to ignition heat.

The resulting impact, when combustion takes place, drives the pile downward and the ram back upward. As it moves up it clears the port in the cylinder to exhaust the burned gases to atmosphere. It compresses the air in the space at the top of the cylinder as it continues to rise. This stops the upward stroke and provides air compression that starts the ram back down again to repeat the cycle.

The assembly fits in standard 20½-in. leads. It takes one line for lifting and another to handle a pile and also to lift the hammer piston for the start of operation. Weight is 11,000 pounds. The idling stroke, which does not involve impact, is between 22 and 24 inches. Output energy is 16,000 foot pounds. Operation is at 85 strokes per minute. Stroke intensity is under the operator's control at a remote hydraulic extension. Overall dimensions are 20 in. in diameter by 15½ ft. in length.

BREVITY—Identify by IEN - 4391 if you write the maker

TESTING . . Electronic instrument to study vibration, dynamic stresses

Source: ELECTRONIC TUBE CORP.
1202 E. Mermaid Lane, Philadelphia 18, Pa.

Four traces can be displayed simultaneously on the 5-in. oscilloscope screen in this new Type H-42A Strainalyzer. The traces are originated by strain gages in individual circuits leading into the instrument, each to its own bridge circuit. Phenomena can be recorded to a frequency of 50 kc. Weak signals can be amplified 30 to 1,000 times.

Relative pressures at four different points on a gun barrel is a typical application. All four traces will appear simultaneously on the screen in correct time and phase relation. The instrument is not acoustically sensitive.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4392 if you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO *Cork Faced* BULLETIN BOARDS

STYLE NO. 440

F.O.B. PHILADELPHIA $9.00

A quality bulletin board that may be adopted for general use . . . Manufactured of a specially fabricated cork faced material with a hardwood frame. Cork face is in natural tan color, frame satin-finish stained a slightly darker shade to harmonize . . . Size over all, 27" x 39" . . . A practical answer for office and plant use, institutions, schools, hospitals, commercial establishments and many other locations.

SPECIAL SIZES TO ORDER

Write for Bulletin F51

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 4393 if you write the maker

LUBRICATION ECONOMY

LUBRIPLATE LUBRICANTS Cut Parts Replacements 50%

The Northern Pacific Transport Company writes us:—"Since using LUBRIPLATE periods are stretched from Lubricants, our overhaul 50,000 to 200,000 miles, and repair parts bill cut 50%. LUBRIPLATE Lubricants will show you startling savings in parts and increased production.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

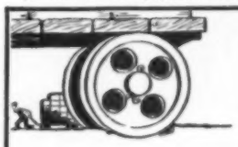
Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

BREVITY—Identify by IEN - 4394 if you write the maker



IN A Rut?

DON'T LET WORN FLOORS SLOW UP PRODUCTION!

A *real* heavy-duty floor must be concrete—*good* concrete. 'Incor' 24-Hour Cement assures stronger, longer-lasting, heavy-duty concrete floors—by curing THOROUGHLY in 24 hours, instead of a week or more.

Don't let worn-out floors slow production—rebuild floors over a week-end with 'Incor'*—no plant tie-up—no time-loss!

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U.S. Pat. Off.

LONE STAR CEMENT CORPORATION
Offices: Albany • Bethlehem, Pa. • Birmingham • Boston • Chicago • Dallas • Houston Indianapolis • Jackson, Miss. • Kansas City, Mo. • New Orleans • New York Norfolk • Philadelphia • Richmond • Roanoke • St. Louis • Washington, D. C.

BREVITY—Identify by IEN - 4395 if you write the maker

NORMA-HOFFMANN *Precision* BEARINGS

A TYPE AND SIZE FOR MOST APPLICATIONS

No matter what your bearing requirement . . . for electric motors, machine tools, business machines, instruments or household appliances . . . Norma-Hoffmann can give you the right bearing for your particular application. These *Norma-Hoffmann precision bearings,* ball or roller, will improve product performance with efficient friction-free operation. Their built-in ability to operate dependably under every load, speed and duty means you get long life with minimum maintenance. 108 distinct series from ⅛" to 21" bore gives you a wide range of choice. Write for catalog.

NORMA-HOFFMANN BEARINGS CORPORATION
Precision Ball, Roller and Thrust Bearings
STAMFORD, CONNECTICUT

BREVITY—Identify by IEN - 4396 if you write the maker

ENGINEERS AND DESIGNERS
This is for YOU

Success in designing steel components—avoidance of localized stresses—good design and bad design from the metallurgical viewpoint—steel selection and treatment as they affect the design engineer. This invaluable book gives the answers!

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72 pages of valuable information on scientific design and metallurgical data—write for it now . . .

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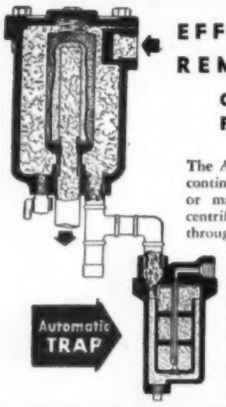
F26

BREVITY—Identify by IEN - 4397 if you write the maker

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES
OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

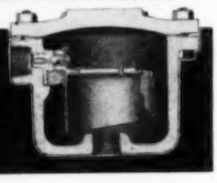
R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* **AIR FILTER**

BREVITY—Identify by IEN - 4398 if you write the maker

HOW TO GET RID OF CONDENSATE RAPIDLY

CRANE inverted open float steam traps



WORKING PRESSURES: 1 to 300 pounds saturated steam

You can increase your plant efficiency with Crane Inverted Open Float Steam Traps. They not only remove condensate as rapidly as it accumulates, but save many fuel dollars by recovering it for heating, hot water needs, or for return to boilers.

Discharge capacities are high, even though these traps are small and compact. Easy to install, Crane Steam Traps require only routine maintenance. Only major moving part is the float which actuates disc through a simple lever.

For more complete information, ask your Crane Man about them, or SEE YOUR No. 49 CRANE CATALOG.

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INDUSTRIAL EQUIPMENT NEWS

CCA · The Original IEN Founded 1933 · NBP

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This Issue 67,500 Copies
Printed by Charles Francis Press, New York

Industrial Equipment News acts solely in a news reporting capacity for data supplied to it on new industrial developments.

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What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 MAY, 1951 No. 5

Since May of 1933

If you are one of those on the original "request" list for Industrial Equipment News and if you have saved all of the issues since the first, eighteen years ago this month, you would have 217 counting this one. In them you would have accumulated information on 43,000 new products or improved versions of previously developed products, in which the improvements were new at the time they were reported. You would have been additionally informed, month by month, on the established products of a thousand or more manufacturers who employed space in Industrial Equipment News to offer you their help in your operating problems.

We have collected the new product information and have used it for editorial descriptions aimed at essential facts to usefully inform experienced men. We have watched the request list grow from the initial 12,000 to over 65,000. Today it reads like a "blue book" of men in authority in engineering and production and plant operation across the industrial field. We are proud of that list. We realize it represents the interest and support you have given us over the years. We shall make every effort to merit both.

The products that have been reported to make up the 43,000 total to date comprise just about every industrial subject. They include equipment and tools and instruments and gages, materials and supplies and product components. They are big and little, mechanical and electrical and chemical, metallic and non-metallic for every conceivable use.

Most of them, of course, are aimed frankly by their makers to compete in a service previously pioneered by one or two. Each month, however, are examples of unusual things which Industrial Equipment News assembles as front-page or front-page-noted news. These products are the starting points for new procedures and for additional products which will appear as the months go by. They can be counted as the indicators of industrial trends. Let's list just a few from the past twelve months—

Electronic computer forecasts machine production. Glass-coated metal bearings operate with rubber sleeve. Brush-on dye discloses minute metal cracks. Magnetic-particle clutch controls equipment drive. Unit internal mechanism is removed and replaced for pump repair. Chromium plating outfit is practical for small users. Catalytic exhaust neutralizes dangerous engine gas. Magnetic rack "floats" steel sheets for safe handling. Pneumatic device delivers air-oil mist to bearings. Color television reproduces observed remote conditions. Tiny hygrometer element and electronic equipment measure and control moisture in air. Special telephone connects several departments to central dictating department. Plastic mirrors with vacuum silvering are not subject to breakage in service.

What do you need? We suggest you look first in Industrial Equipment News because the chances are good that you will find it there. If it does not appear in your current issue just ask us about it. We have extensive records and many contacts to find it for you. We have been building both since May of 1933.

W. E. Irish.

BREVITY—Identify by IEN - 4399 if you write the maker

HIGH EFFICIENCY
DUST CONTROL
with DUCON WASHERS

- Afford the most economical and efficient control and wet suppression of dust and fumes because of superior design and unique features.

- In addition to use for washing of air and gases, DUCON Centrifugal-Wash Collectors are ideal for many other applications, such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.
- Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.
- Construction steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for descriptive, illustrated Bulletin CW48-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 4400 if you write the maker

S-A Car Pullers

Save Time, Cut Costs

If you have your own switch track, you can use an S-A Car Puller. No need to use a gang of men or wait for a switch engine. *One man can shift or spot up to six loaded cars under normal conditions.* Powerful capstan will also pull or lift other heavy loads at 45 feet per minute.

Write for bulletin 1339

STEPHEN S-A ADAMSON MFG. CO.

Tellevel Bin Level Controls • Car Loaders
SACO Speed Reducers Car Pullers • Winches
SealMaster Ball Bearings

231 Ridgeway Ave., Aurora, Illinois

BREVITY—Identify by IEN - 4401 if you write the maker

6 REASONS why American industry specifies WIGGINS

- ★ *Craftsmanship*
- ★ *Integrity*
- ★ *Uniformity*
- ★ *Low pressure drop*
- ★ *Leak proof seal*
- ★ *Engineering Service*

Over many years, Inst-O-Matic has acquired a value far above its mere mechanical qualities, a value proved by its acceptance throughout industry and in all branches of the armed services.

EQUIPMENT MANUFACTURERS

Users' experiences prove conclusively that this design stands up longer under extreme pressure and vibration, and rarely requires replacement. Inquire today.

Basic Sizes: ¼", ½", ¾"; intermediate sizes where needed. Unconditionally guaranteed leak proof from zero to maximum recommended pressure.

Wiggins

INST-O-MATIC COUPLINGS

For proof of performance, write for name of nearest representative to E. B. WIGGINS OIL TOOL CO., INC., 3424 S. Olympic Blvd., Los Angeles 23, Calif.

BREVITY—Identify by IEN - 4402 if you write the maker

5 ways to use LOVEJOY VARIABLE SPEED PULLEYS

FOR QUICK PRODUCTION CHANGES

- Speedability of different operators
- Variation in size of parts or stock
- Variation in temperature or humidity
- Variation in size or density of materials
- Changes in production schedules

No Stops for Speed Changes.

Easily installed with any equipment new or old. Finger-tip control. Available from fractional to 8 H.P. duties.

SHIPPED FROM STOCK

Write for complete catalog today

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. LAKE STREET CHICAGO 44, ILL.

Also mfrs. of Lovejoy Flexible Couplings and Lovejoy Universal Joints

BREVITY—Identify by IEN - 4403 if you write the maker

DESIGNED— for quiet, dependable operation

SEALMASTER BALL BEARING UNITS

- ★ Pillow Blocks
- ★ Take-Up Units
- ★ Flange Units
- ★ Cartridge Units
- ★ Flange Cartridge Units

Self-Aligning—Exclusive design permits shaft misalignment in any direction, without distortion of seal.

Permanent Seal—Patented centrifugal seals exclude dirt and retain lubricant.

Pre-Lubricated—SealMasters are shipped with lubricant sealed in—ready to use.

No Housing Wear—Patented locking pin positions unit for relubrication and prevents rotation of outer race in housing.

Write for Catalog 845

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Factory Representatives and Dealers in All Principal Cities

BREVITY—Identify by IEN - 4404 if you write the maker

Amazing FLASH BOX OPENER

Opens Any Carton Quicker . . . Cleaner

Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

Retail Price **$1.75**

FLASH BOX OPENER CO., Inc.

52 W. Houston St. • New York 12, N. Y.

BREVITY—Identify by IEN - 4405 if you write the maker

MIXING . . Machine for glue mixes dry adhesive and water

Source: TRIANGLE PACKAGE MACHINERY CO. 6635-53 W. Diversey Ave., Chicago 35, Ill.

Visco-Mat is a new mixing machine to take glue in dry powder form into which it measures and then mixes the correct amount of water to produce a predetermined viscosity. The machine holds the liquid glue in storage for feed to a distributing line or for withdrawal through a manually operated drain.

Storage capacity is 2,750 gal. of liquid glue which would require 600 cu. ft. of storage volume as compared to the 240 cu. ft. actually required when the dry powder is stored prior to use in 100-lb. bags. Floor space for the machine measures 4 by 4 feet. Overall height is about 7½ feet.

BREVITY—Identify by IEN - 4406 if you write the maker

LUBRICATING . . Molybdenum base grease for extreme pressure surfaces

Source: ALPHA CORP. 3 Seneca Place, Greenwich, Conn.

Bulletin 52 gives details

Molykote Type G is a new combination of the company's molybdenum disulphide lubricating powder, previously described IEN-9482-49, and a grease-type vehicle. The lubricant applies where extreme pressure is to be encountered as in power screws, press fittings, toggle joint bearings, threaded connections, tapers, wedges, lathe centers, gear teeth. The lubricant is chemically stable and can be employed in temperatures between sub-zero and 750 deg. F.

BREVITY—Identify by IEN - 4407 if you write the maker

DUST COLLECTING . . Filter panel employs viscous coated wire screen

Source: AMERICAN AIR FILTER CO. 123 Central Ave., Louisville 8, Ky.

Corrugated strips of fine-mesh wire screen are placed together to form a series of pyramid-shaped pockets in this new dust-collecting filter panel. Small ends of the pocket are closed to the air flow to eliminate open air passage through the unit. The design is intended for operation on velocities to 500 fpm. The panels can be serviced in a conventional manner by washing out the accumulated dust and by recharging with an adhesive medium. Four sizes measure 16 and 20 in. in width, 20 and 25 in. in height, 2 in. in thickness.

Bulletin 203, 8 pages, presents illustrated description and specification with suggestions for multiple installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

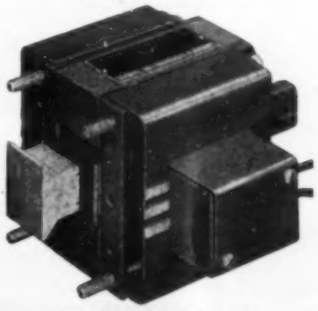
BREVITY—Identify by IEN - 4408 if you write the maker

TROMBETTA SOLENOID CORP.

MILWAUKEE WISCONSIN U.S.A.

FOREMOST SOLENOID MANUFACTURERS IN THE WORLD

CAN FURNISH SOLENOIDS FOR ANY APPLICATION CONCEIVABLE



F-326 PULL TYPE SOLENOID

10 lbs. at 85%; 14 lbs. at 100% voltage and 1½" stroke.

THE F-30 LINE OF SOLENOIDS IS THE RESULT OF 26 YEARS OF CONTINUOUS DEVELOPMENT, IMPROVEMENT AND EXPERIENCE.

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Heat it BETTER and FASTER for LESS! with CHROMALOX Electric HEATING UNITS

USE CHROMALOX Electric HEATING UNITS *for efficient and accurate heat to fit your EXACT needs!*

Chromalox Heaters give you fast, uniform, "on the spot" heat at low initial cost and low operating costs in hundreds of applications. They come in types, sizes and capacities to fit every specific production need. Check their time and money saving advantages now! On-the-job engineering service without obligation.

For details on Chromalox Heaters

Send for the valuable, informative Catalog 50. It lists many of the more than 13,000 types, sizes and ratings of Chromalox Electric Heaters for hundreds of uses.

See Chromalox Radiant Heaters Advertisement, Page 11

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.

CHROMALOX 18-8

ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 4410 if you write the maker

For IMMEDIATE DELIVERY of R-B* INTERCHANGEABLE PUNCHES AND DIES

WRITE, WIRE or CALL one of these R-B Representatives:

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GREENSBORO, N. C. Jeffries Eng. & Eq. Co.	DAYTON 5, OHIO H. E. Schuley	CHICAGO 11 Peck, Fullerton
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Get the Whole Story . . . in this Free 48-Page Catalog

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BREVITY—Identify by IEN - 4411 if you write the maker

Fast, Uniform Drying On Jobs Like These

OFTEN DIELECTRIC HEATING is the only solution to a drying problem requiring speed and uniformity. Here are some of the jobs you can do with versatile Allis-Chalmers dielectric heaters:

1. Core Drying
2. Twist setting
3. Sterilizing
4. Preheating plastics
5. Drying rayon fibers
6. Preheating linoleum
7. Heating rocket fuels
8. Drying gunpowder
9. Vulcanizing rubber
10. Creating chemical reaction
11. Woodgluing

Continuous conveyors can carry the material between the electrodes for drying. Space requirements are small. Drying takes only a few minutes.

If you have a problem of this type, call your nearby Allis-Chalmers district office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3356

ALLIS-CHALMERS

BREVITY—Identify by IEN - 4412 if you write the maker

More Efficient Than an Elevator—
Cost $3,044 LESS

WRITE—
for Suggestion. Give height, floor to floor and horizontal space available—Also maximum unit load.

- Saves on Maintenance
- Costs Less to Operate
- 500% Faster Loading and Unloading Trucks
- Safer to Operate
- More Flexible in Use

METZGAR

METZGAR CO.
417 Douglas, N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 4413 if you write the maker

FOR CONSTANT SERVICE

When each trolley wheel carries its share of the load in perfect alignment with the craneway tracks and all possible friction is eliminated, the result is perfectly articulated trolley travel.

Applied to American MonoRail Cranes, these articulated trolleys permit constant operation—handling loads up to 10 tons. And with this is offered all the flexibility of MonoRail design for interlocking carrier service between and beyond the craneways.

Let an American MonoRail engineer explain all the advantages of these new cranes, or write for complete information.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 4414 if you write the maker

NEW SLIDE CHART MAKES HEAT TREATING EASIER

Enables you to find at a glance this heat treating information on Carpenter Matched Tool and Die Steels:

- Forging heat
- Normalizing heat
- Annealing treatment
- Hardening treatment
- Drawing ranges
- Effect of drawing temperature on hardness

Gives new, valuable data on speed of heating with 2 vital rules for better results, tips on quenching in water, brine, oil and air, estimating oxidizing atmospheres, heating time, etc. A "must" to help every toolmaker and heat treater get better results, today. Return coupon now for free, easy-to-use slide chart.

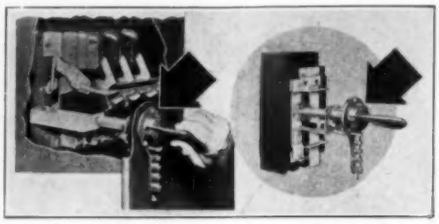
THE CARPENTER STEEL COMPANY
151 W. Bern Street • Reading, Pa.
Please rush to me at no obligation, new Carpenter Guide to *Simplified* Tool Steel Heat Treating.

NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(PLEASE PRINT)

BREVITY—Identify by IEN - 4415 if you write the maker

SWITCH . . Operating mechanism for control assembly on a machine

Source: SQUARE D CO.
4039-43 N. Richards St., Milwaukee 12, Wis.



Bulletin 2420-FG identifies a new operating mechanism that applies with the company's thermal magnetic-trip circuit breaker or its new heavy-duty switch to permit assembly by a machine manufacturer of his own control panels and other electrically-operated equipment. The mechanism permits the disconnect, either a switch or a breaker, to be mounted directly on a control panel without the use of posts or brackets. A coupling rod from the disconnect engages a separate operating-handle assembly mounted on the door. A rubber gasket is supplied which can be used in mounting the handle in an NEMA 1A, V or XII cabinet.

Changes in length of the coupling rod accommodate cabinets of varying depth. A built-in adjustment in the coupling compensates for error in rod length or cabinet depth within ¼ inch. Interlocks and padlocking are available.

BREVITY—Identify by IEN - 4416 if you write the maker

CLEANING . . Floor sweeping machine, engine drive, two speeds, 24 in. brush

Source: G. H. TENNANT CO.
2528-32 N. 2nd St., Minneapolis 11, Minn.

Attachment brush to gather dirt and litter at the side and to bring it into the path of the main brush has been developed for the company's Model-24 power sweeper, previously described IEN-2307-50. The new assembly is now available on both the 24 and 36-in. machines. **Gutter Brush** is the designation.

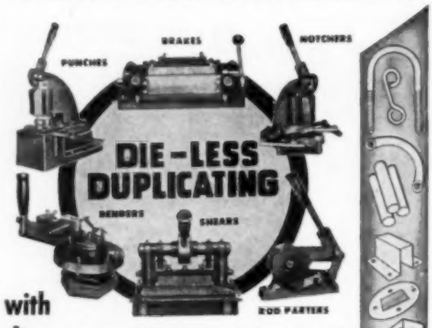
As in the initial design the operator lowers the main brush to the floor by depressing a pedal. He then shifts a two-speed transmission for low to 2 mph. or high to 8 mph. and depresses the accelerator pedal on the 4.4-hp. air-cooled gasoline engine. A centrifugal clutch engages at predetermined engine speed for drive and to operate a vacuum blower.

Dirt and litter are swept into a compensating hopper that floats in sealed position above the floor. The vacuum blower draws dust into a filter bag mounted on the housing. The operator steers the machine along an aisle. He also can reverse the drive to back out of a blind space. Capacity of the dirt hopper is 6 cubic feet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4417 if you write the maker

BREVITY—Identify by IEN - 4418 if you write the maker



with
di-acro PRECISION MACHINES

Eliminate dies . . . speed production . . . in both your experimental and quantity run duplicating operations. An unusually wide variety of both simple and intricate parts can be precision made by "DIE-LESS DUPLICATING" with the individual or co-operative application of DI-ACRO Precision Machines (see examples at right). DI-ACRO Machines are now offered in a total of six types and 21 different sizes, including two new units—a power driven Shear and a hydraulic Bender.

SEND FOR 40 PAGE CATALOG
ENGINEERS—DESIGNERS—PRODUCTION MEN should all have this informative catalog which contains technical data covering DI-ACRO Machines and our offer of "Die-Less Duplicating" Engineering Service to aid in solving design and production problems... WRITE FOR YOUR COPY TODAY.

O'NEIL-IRWIN MFG. CO.
318 8th Avenue, LAKE CITY, MINN.

BREVITY—Identify by IEN - 4419 if you write the maker

Cut Polishing Time
Improve Surface Quality
with "LINDE" FINE ALUMINA POWDERS

Obtain superior finishes, free from microscopic pits and scratches in a fraction of the usual polishing time. Use less abrasive and use it directly without levigation and other wasteful preparatory steps. They can also be compounded with waxes and used in stick form.

LINDE Fine Alumina Powders are characterized by ultra-fine, uniform particle size, high purity, and swift polishing action. They have gained wide-spread acceptance in polishing materials ranging from metallographic specimens to gemstones and noble metals.

Call or write any LINDE office and we will be glad to discuss your particular polishing applications.

	Type A	Type B
Chemical Composition	Alpha Al_2O_3	Gamma Al_2O_3
Particle Size (approximate)	0.3 Microns	Less than 0.1 Microns
Hardness (Moh's) (Equivalent to crystalline material)	9	8
Crystalline Structure	Hexagonal	Cubic

The term "Linde" is a trade-mark of Union Carbide and Carbon Corporation.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street, New York 17, N. Y. UCC Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

BREVITY—Identify by IEN - 4420 if you write the maker

EYE LEVEL CHECK
ON BOILER WATER LEVELS

Positive, constant check on boiler water levels is now possible at eye level—right on the instrument panel or other convenient location.

Yarway's Remote Liquid Level Indicator is always accurate because it's operated by the boiler water itself. No stuffing boxes. Indicating mechanism is never under pressure.

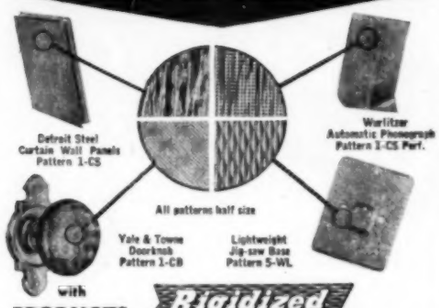
Ideal for indicating boiler water level, feed heater water level, superheater pressure differentials and tank levels. For complete description and operating details, write for Bulletin WG-1821.

YARNALL-WARING COMPANY
122 Hermaid Avenue, Philadelphia 18, Pa.

YARWAY
REMOTE LIQUID LEVEL INDICATOR

BREVITY—Identify by IEN - 4421 if you write the maker

FABRICATION VERSATILITY
with
MORE UNITS PER POUND OF METAL



with PRODUCTS made of Rigidized DESIGN STRENGTHENED Metals

Rigidized Metals offer you fabrication by all standard methods, including forming, punching, stamping, welding and riveting, with increased strength, gauge reduction, materials conservation, surface protection. Designs for every use.

Send for RIGIDIZED METALS IDEA HANDBOOK TODAY

Rigidized Metals Corporation

664 OHIO STREET, BUFFALO, N. Y.

BREVITY—Identify by IEN - 4422 if you write the maker

SIMPLIFY tough PULLING jobs

Pull Rod or Screw Is Inserted through UNIQUE "CENTER-HOLE"* Ram plunger and is drawn in a straight, torque-free pull through Ram. Ram is its own back up! Less rigging time — more effective power!

10 to 100 ton capacities.

*"Center-Hole" in Rams of 30-ton and greater capacities.

Simplex Re-Mo-Trol

HYDRAULIC PULLERS
PUMPS AND REMOTE CONTROLLED RAMS

If it can be pulled, Re-Mo-Trol can pull it—easier and faster! Pulls liners, sleeves, shafts, gears, etc. SAFER remote control. Also lifts or presses. Can save its cost on a single tough job!

WRITE FOR BULLETIN: HYDRAULIC 51

Simplex Jacks

TEMPLETON, KENLY & CO.
1012 South Central Avenue • Chicago 44, Illinois

BREVITY—Identify by IEN - 4423 if you write the maker

FABRICS & TAPES For ALL INDUSTRY

• COTTON
• VINYON
• RAYON
• NYLON
• GLASS

FLIGHTEX FLIGHTEX FABRIC FABRICS

If you use special industrial fabrics and mechanical tapes, you'll find Flightex a dependable source of supply. Our staff of engineers is at your service to help solve your fabric and tape problems.

Write for Complete Information

FLIGHTEX FABRICS, Inc.
95 Worth Street New York 13, N. Y.

BREVITY—Identify by IEN - 4424 if you write the maker

CLEANING . . Steam spray machine employs electrically heated boiler

Source: LIVINGSTONE ENGINEERING CO.
102 Grove St., Worcester 5, Mass.

Model JC-10 is a new hand-truck mounted assembly of the company's cleaning equipment, similar to that previously described IEN-11067-50. Assembly weight is about 100 pounds. The boiler is built to meet ASME Code. It carries the National Board stamp and is Underwriters' Laboratories listed. Operation is on 220-volt single-phase ac. in standard construction, but other standard current characteristics can be specified. The new unit delivers high pressure steam to a lance and picks up detergent solution to cut dirt, grease and oil from surfaces against which the jet is directed.

BREVITY—Identify by IEN - 4425 if you write the maker

ADHESIVE . . Liquid urea resin for use on wood and to bind abrasives

Source: LIBBEY-OWENS-FORD GLASS CO.
2114 Sylvan Ave., Toledo 6, Ohio

For hot or cold press use

Type 530-11L is a new liquid adhesive, light tan to brown in color and of about the consistency of syrup. It remains stable for three months at temperature to 80 deg. F. It is mixed with one or the other of two hardeners prior to application. One hardener is employed for hot and cold-pressing application in assembly of plywood panels. The other is for uses other than in wood assemblies.

Spread is 40 to 45 lb. per 1,000 sq. ft. of single glue line. Closed-face assembly time is maximum at about 20 minutes. Standard pressure for soft woods is about 150 lb. per sq. in.

BREVITY—Identify by IEN - 4426 if you write the maker

HEATING . . Gas fired oven for small work rates to 650 deg. F.

Source: CARLSON CO.
277 Broadway, Room 1302, New York 7, N. Y.

Dimensions of the heating chamber inside the insulated housing of this new oven measure 10 by 12 by 9 inches. Work can be brought up to and held at any desired temperature between 250 and 650 deg. F. by setting the Robertshaw controller at the gas burner. This burner is mounted under a baffle to prevent impingement of the flame on work in the oven. A flue connects to an outside exhaust. Overall dimensions are 14 by 16 by 20 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4427 if you write the maker

Help WIN the SHELL Game

Furnished in several sizes and styles, Logan Concave Rolls speed shell manufacturing and assembly.

MAKING SHELLS? Logan Concave Rolls speed shell production. (a) Rolls available in sizes to handle shells 3" and up. (b) Shape of Logan rolls eliminates lateral rolling. (c) Neoprene covered rolls for use after copper band is applied to shells. (d) Both straight and curved sections available. (e) Smaller sizes of shells usually handled on pallets on conventional roller conveyor. (f) Suitable power conveyor also available when required. Write today for further information or for the nearest Logan Engineer to call.

Logan Conveyors

LOGAN CO., 200 CABEL ST. • LOUISVILLE 6, KY.

BREVITY—Identify by IEN - 4428 if you write the maker

P.A.T.'50 is pyrometric control for increasing furnace output

With record demands on production, new P.A.T.'50 Control comes at the ideal time to help increase furnace output. Here's why:

New P.A.T.'50 Control acts on the speed of temperature swings as well as their size and permanence. The faster the swings, the further P.A.T.'50 moves the fuel valve. When this movement, called "Rate Action," begins to head off changes, the control backs away and rapidly brings temperature in line.

Only electric positioning control with rate action, P.A.T.'50 can be added to earlier P.A.T. controls by changing control units (center picture) and making slight changes in the controller.

For details, write us at 4906 Stenton Ave., Philadelphia 44, Penna.

LEEDS & NORTHRUP COMPANY, 4906 STENTON AVE., PHILA. 44, PA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES

Jrl Ad. ND4-33(1b)

BREVITY—Identify by IEN - 4429 if you write the maker

A NEW BOOK TO HELP YOU CUT COSTS

Our new booklet on Rex Stock Sprockets gives you all the details on how these sprockets will add life to your chain drives. Cast in either highest quality gray iron or long wearing Rex Temperim, there is a correct Rex Sprocket for every chain in our complete line.

The booklet includes complete specifications, prices and ordering information. Send for it today, using coupon below.

REX CHAINS and SPROCKETS

CHAIN BELT COMPANY 49-111
1675 W. Bruce Street, Milwaukee 4, Wis.
Gentlemen:
Please send me a copy of Bulletin No. 49-30.
Name.....
Company.....Dept.....
Address.....
City.....State.....

BREVITY—Identify by IEN - 4430 if you write the maker

5 built-in advantages found only in . . . BLAW-KNOX Electroforged STEEL GRATING

BLAW-KNOX DIVISION OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.
Offices in Principal Cities

1 Rigid one-piece construction—easy to install.
2 Maximum open area for light and air.
3 Easy to paint—all surfaces accessible.
4 Non-slip Twisted Cross-Bar.
5 Self-cleaning—no sharp corners to clog.

Blaw-Knox Grating Has Them All!

WRITE FOR BULLETIN 2365

BREVITY—Identify by IEN - 4431 if you write the maker

LANSING, MICHIGAN

LANSING CO.
LANCO MATERIAL HANDLING EQUIPMENT

BREVITY—Identify by IEN - 4432 if you write the maker

THOMAS TRUCK & CASTER CO.
164 MISSISSIPPI RIVER
KEOKUK, IOWA

BREVITY—Identify by IEN - 4433 if you write the maker

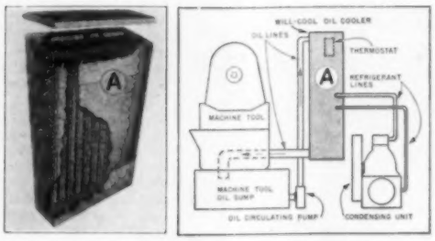
DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 W. VERNON AVENUE
LOS ANGELES 37, CALIF.

Electric Cranes • Hand Cranes • Jib Cranes • Sheaves • Sheave Blocks
Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane End Truck Units • Jib Crane Fittings • Automatic Mechanical Load Brake Crane Hook Blocks

BREVITY—Identify by IEN - 4434 if you write the maker

COOLING . . Heat exchanger for coolants, lubricants, hydraulic oil

Source: B. S. WILLIAMS CO.
4-8 North St., Mount Vernon, N. Y.



Will-Cool Oil Cooler is a new tube-type heat exchanger for application with suitable refrigerating equipment to remove heat from cutting oils, lubricants, and oils employed to transmit hydraulic pressure in a machine. The exchanger is available in a range of sizes rating 1½ to 7½ ton of refrigeration. The 2-ton unit rates 20 gpm. of cutting oil under normal conditions and measures 22 by 12½ by 41 inches.

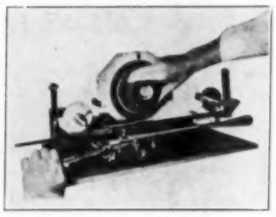
Refrigerant is circulated from suitable equipment with which the exchanger applies to flow through the return-bend coil in a closed circuit. The oil to be cooled is delivered from the machine by a pump which the user supplies. It enters the exchanger through a distributor head at the top where it is delivered in a row of fan-shaped sprays. The sprays fall to a horizontal baffle plate where the oil accumulates and is directed down around each of the vertical tubes by radial fins assembled in the plate. These fins direct the flow through passages inside of corrugated shells surrounding the tubes.

Cooled oil flows from the bottom to fill a portion of the housing, from where it is led by gravity back to the machine sump. Thermostat and expansion valve control temperature.

BREVITY—Identify by IEN - 4435 if you write the maker

MARKING . . Hand operated press to color mark flat plastic work pieces

Source: ACROMARK CO.
7 Morrell St., Elizabeth 4, N. J.



Transfer tape for color marking in this new Model-1H press feeds from a reel to lie between an electrically-heated dial-type die head and a plastic work piece positioned on a slide table. The die head is indexed by hand to locate characters one at a time. A lever in front of the machine is moved to apply pressure by means of a screw. This transfers the color material on the tape to the work and impresses it in place.

Each impression is accompanied by index movement of the work table to position the work for the next character. The head is mounted inside a ring of insulation at all but the bottom point where the marking takes place. It mounts interchangeable characters in sizes from 1/16 to 3/16 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4436 if you write the maker

BREVITY—Identify by IEN - 4437 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: 2-ounce size, 2 x 4 x 6"

Your inquiries are invited.

DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 4438 if you write the maker

NEW IMPREGNATED FELT GASKETING MATERIAL

PREVENTS CORROSION AND ELECTROLYSIS

SEALS AGAINST DUST, WIND & WATER

CHROME LOCK consists of a high-grade felt, impregnated with a specially formulated blend of permanently thermoplastic resins, plasticizers, inert pigments and chromates. Prevents corrosion on original installations — stops corrosion when applied to rusty joints. Chrome Lock also inhibits *electrolytic action* between dissimilar metals.

CHROME LOCK has outstanding anti-aging qualities and will not deteriorate. Tests prove Chrome Lock far outlasts rubber. Chrome Lock is the ideal seal wherever anti-corrosion, anti-electrolysis and anti-aging properties are required! Read these added features:

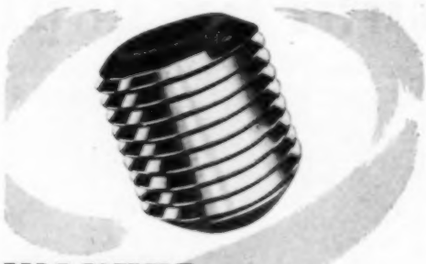
- ★ **EASY TO APPLY:** Pressure-sensitive adhesive back.
- ★ **ANTI-WICKING:** Non-soluble in water or saline solutions. Prevents seepage under normal pressure applications.
- ★ **LIGHTER FLANGING MATERIALS:** Low pressure compressibility reduces required bolt torque pressures.
- ★ **MANY TYPES:** (Type S) Standard Material. (Type H) Flame Resistant. Conforms to Buships Spec. 33F8. (Type OR) Oil Resistant. Used wherever S.A.E. 10-60 oils are present.
- ★ **MANY SIZES:** Thicknesses of 1/64", 1/32", 1/16", 1/8" and 1/4". Widths from 1/4" to 60".
- ★ **CUT GASKETS:** Made to your specifications.
- ★ **NATIONWIDE SERVICE:** Sales engineers in all principal cities.

Write on your company letterhead for new, 6 page Engineering Folder No. SP-1051

Manufactured by Products Research Company
SPRING PACKING CORPORATION
332 S. MICHIGAN AVE. • CHICAGO 4, ILLINOIS

BREVITY—Identify by IEN - 4439 if you write the maker

BREVITY—Identify by IEN - 4440 if you write the maker



WANTED... for more of industry's finest products!

You can see and feel the big difference between P-K Ground Thread Socket Set Screws and ordinary cut thread screws. There are no finer screws made, regardless of the standard of comparison. More manufacturers are specifying Parker-Kalon Socket Screws than ever before. P-K* production is going all-out to meet this mounting demand. For D. O. or other assemblies, set your standards by P-K quality. Parker-Kalon Corporation, 200 Varick St., New York 14.

IF IT'S P-K IT'S O.K.

PARKER-KALON* *cold forged* **SOCKET SCREWS**

*TRADE MARKS REG. U.S. PAT. OFF.

BREVITY—Identify by IEN - 4441 if you write the maker

Let our ENGINEERING DEPARTMENT Supply the answer to your PRODUCTION ASSEMBLY PROBLEM

Our thoroughly trained engineers are ready to design equipment for your individual needs . . . No package goods . . . Whatever we furnish you will be planned for your particular purpose . . . And our 25 years of specialized experience qualifies us to do your job successfully . . . Thousands of manufacturers have profited immeasurably through greatly stepped-up production as a result of our service. You, too, can benefit likewise by the use of D.P.S. power-driven machines. Get further details. Mail the coupon today . . . Also send sample assembly for production estimate.

AVAIL YOURSELF OF OUR UP-TO-DATE EXPERIMENTAL LABORATORY EQUIPPED TO SOLVE THE "IMPOSSIBLE"!

The SOLUTION may be tied in with one of our FOUR MAJOR PRODUCTS!

POWER SCREWDRIVERS

HOPPER FEEDING UNITS

NUT DRIVERS

SPECIAL ASSEMBLING MACHINES

SEND SAMPLE ASSEMBLY FOR PRODUCTION ESTIMATE

MAIL COUPON FOR CATALOG

DETROIT POWER SCREWDRIVER CO.
2015 WEST FORT ST., DETROIT 16, MICHIGAN
Send your catalog and further details.
COMPANY NAME
BY
STREET ADDRESS
CITY STATE

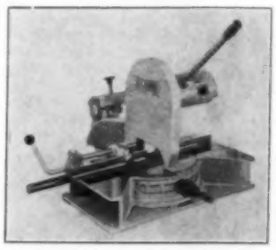
1926 Our 25th ANNIVERSARY 1951

DETROIT POWER SCREWDRIVER CO.

BREVITY—Identify by IEN - 4443 if you write the maker

SAWING . . Cut-off machine for ferrous and non-ferrous metals

Source: STONE MACHINERY CO.
601 Fayette St., Manlius, N. Y.



Model M-14 is a new swing-frame circular sawing machine that can be set to cut square or at any angle to 45 deg. through work positioned on the table by an adjustable clamp. A high-speed saw blade is recommended for non-ferrous solid metals to 1 in. and for light-wall tubing, structurals and extruded work to 2½ inch. Rating is to 2 in. in solids, 2½ in. in pipe and structurals.

The motor is direct connected to the saw-blade spindle and moves down when the operator pulls on a lever to swing the blade into the work. The machine mounts on a bench space of 34 by 32 inches. Weight is about 300 pounds.

BREVITY—Identify by IEN - 4444 if you write the maker

PAINTING . . Bronze lacquers for plated effect on metal, plastic, wood

Source: NATIONAL LACQUER & PAINT CO.
7417-37 S. Green St., Chicago 21, Ill.

Sample for test upon request

Fifteen shades are included in the company's new standardized line of metallic bronze lacquers. Each has the effect of simulating the appearance of a plated finish. The lacquer will not cake, is non-jelling and relatively free from settling out. The colors are non-fading.

BREVITY—Identify by IEN - 4445 if you write the maker

LIGHTING . . Extension cord, holder, and transformer for "safe" operation

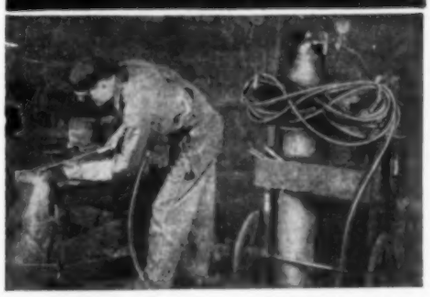
Source: SITTLER CORP.
20 N. Ada St., Chicago 7, Ill.

Extension cord, 20 ft. in length, leads into a transformer to reduce 110-volt ac. input to 12-volt ac. output. Output side of the transformer connects through a 30-ft. extension cord terminating in a lamp holder equipped with a guard and a suspension hook. The assembly is designed to protect an operator against electric shock. The transformer is enclosed in a cast-aluminum water-tight housing. A shield between the primary and secondary windings is grounded to the core and transformer housing with the ground wire in the input cord.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

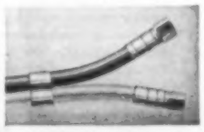
BREVITY—Identify by IEN - 4446 if you write the maker

TWO HOSES...ONE LINE!



TWIN-WELD HOSE SPEEDS WELDING STOPS TANGLING

Patented Twin-Weld® combines a green oxygen line and a red acetylene line molded into one compact unit. No more dangerous, tangled separate hoses . . . the operator has one neat, flexible, non-kinking line that makes his job safer, faster, more efficient. Especially useful in close-quarter work. Call your Hewitt Rubber distributor, or write Hewitt Rubber Division, 240 Kensington Avenue, Buffalo 5, N. Y.



HEWITT-ROBINS HR INCORPORATED

BREVITY—Identify by IEN - 4447 if you write the maker

For a better drive, select the proper Cleveland unit

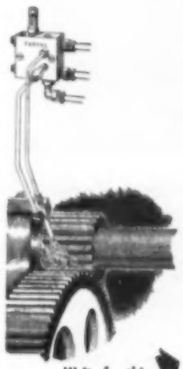
WRITE for copies of the latest Cleveland catalogs for full information on all types and sizes of worm gear speed reducers —including rating tables, dimensional diagrams and data for both standard and fan-cooled units. Ask for Catalog 200 for standard drives and Catalog 300 for Speed-aire (fan-cooled). The Cleveland Worm & Gear Co., 3258 East 80th St., Cleveland 4, O.

CLEVELAND Worm Gear *Speed Reducers*

BREVITY—Identify by IEN - 4448 if you write the maker

New Farval Spray Valve

METERS LUBRICANTS TO SLIDE SURFACES AND OPEN GEARING



Write for this FREE bulletin

BY an ingenious adaptation of the familiar Farval Dualine Valve, either grease or oil is sprayed through a nozzle—onto any desired area, in any amount, at any interval.

The new Farval Spray Valve can be added to a regular Farval Dualine Lubrication System wherever compressed air is available—or a complete system of spray valves may be installed, served by either manual or automatic pumping unit.

Farval Spray Valves have been thoroughly tested in service on a wide variety of machines and equipment, supplying lubricant efficiently, economically and safely to open gearing, slide surfaces and other areas where Farval closed systems are not readily adaptable.

For full description with diagrams, get Farval Bulletin No. 60. The Farval Corporation, 3258 East 80th Street, Cleveland 4, Ohio.

FARVAL CENTRALIZED SYSTEMS OF LUBRICATION

BREVITY—Identify by IEN - 4449 if you write the maker

Saves Time on deburring, facing, chamfering, center drilling, reaming operations . . .

Designed to speed tube, pipe, and rod end-finishing work of any size or length up to 2" diameter. Has a new-type chuck and clamping unit, automatic swing-type stock stop, interchangeable jaw inserts, multiple tool holders, precision spindle bearings, ½ hp. motor, 8-speed sheave. Portable, weighs only 170 lbs. Fast, easy to operate, has quick change-over features. Forward movement of operating lever, clamps piece, removes stock stop, feeds work to cutters. Operator always has one hand free for loading. Saves time. Typical production: 400-500 tube ends per hour. Speeds output.

Write for Free Bulletin

PINES ENGINEERING CO., INC.
Specialists in Tube Finishing Equipment
620 WALNUT AURORA, ILLINOIS

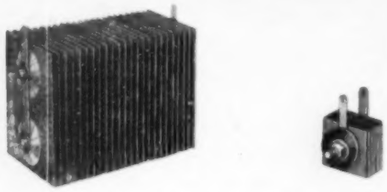
Get more facts today on this new cost-cutting tool. Larger models up to 3" capacity also available.

For long-run work ask for data on semi-automatic models with four extra? ...

BREVITY—Identify by IEN - 4450 if you write the maker

SYNTRON

SELENIUM RECTIFIERS

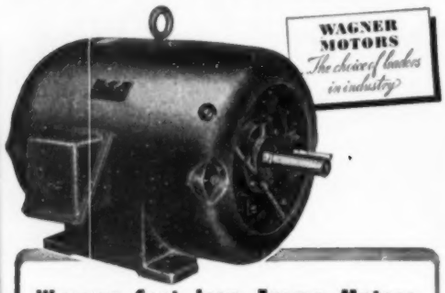


1" sq. to 12" x 16" cells—in stacks or single cells for customer assembly. Made by a new process to uniform, high quality, for continuous, uninterrupted service.

Write for Literature

SYNTRON COMPANY
410 Lexington, Homer City, Pa.

BREVITY—Identify by IEN - 4451 if you write the maker



Wagner Cast Iron Frame Motors

resist the damaging action of acids, fumes, moisture and other destructive elements

Wagner cast iron frame motors are built to provide corrosion-resistance. They feature well-impregnated, special varnish treated windings protected by totally-enclosed fan-cooled construction . . . a cast iron, gasket sealed conduit box . . . and drain plugs in the endplates for easy removal of any condensation from inside the motor.

These motors are available in ratings from 5 to 250 horsepower, in both standard (type EP) and explosion-proof (type JP) designs. Write for Complete Information.

Wagner Electric Corporation
EST. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 4452 if you write the maker

BIN-LEVEL CONTROLS

2 BIN-DICATORS
Often Replace 1 Man

BIN-FLO
Aerating Units Keep Finely-Ground Materials Moving

ECONOMICAL MATERIAL CONTROL

DEPENDABLE BIN-LEVEL INDICATION

Mail this Coupon

THE BIN-DICATOR CO., 13946 Kercheval, Detroit 15, Mich.

Please send new 20-page catalog giving complete information and specifications on BIN-DICATORS. Also please send information on BIN-FLO Aerating Units.

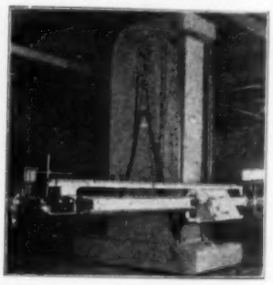
Name_____
Address_____
City_____ Zone____ State_____

N-5

BREVITY—Identify by IEN - 4453 if you write the maker

WELDING . . Track mounted machine to apply automatic arc equipment

Source: REED ENGINEERING CO.
1005-15 W. Fairview Ave., Carthage, Mo.



A movable arm is mounted for horizontal and vertical travel on a motor-driven track-mounted support column in this new machine. Standard automatic arc-welding equipment for submerged-melt welding is installed on the arm to customer specification. The column has a variable-speed range between 5 and 320 ipm. on the track. The welding arm is adjustable vertically through distance sufficient to clear a 12-ft. work diameter. The arm is retracted horizontal by a variable-speed drive to weld 10-ft. seams at right angles to the main track.

Dual controls permit operation from the ends of the arm or from the base of the column. The equipment is intended primarily for application in large tank-welding operations for which the company is also prepared to supply variable-speed turning rolls to handle vessels to 100 ft. in length.

BREVITY—Identify by IEN - 4454 if you write the maker

COUNTING . . Predetermining unit, two to five dial-set digit wheels

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.

Batch quantities can be set up by turning dials on the face of this new predetermining counter. Upon starting a counting cycle the unit will accumulate the count until the predetermined amount is reached. Then it operates a built-in control switch and, at the same instant, resets itself to start the next counting cycle. The switch can be connected to start or stop electrically-operated equipment, to open and close signal circuits and actuate various types of controls.

Any object or motion can be counted in which actuation can be made to operate a switch, a relay, a photoelectric unit, or other types of circuit-breaking devices. The counter can be located at any distance from the actual counting source with connection to a 110-volt 25 to 60-cycle ac. power line. Monitor Automatic Batch Counter is the designation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

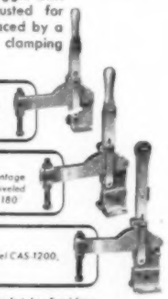
FIND WHAT YOU WANT?
All products and services are listed in the index, page 110

BREVITY—Identify by IEN - 4455 if you write the maker

Announcing

NEW CAM CLAMPS

These cam-action clamps were designed for applications where parts (such as castings, larger forgings, or stacked stampings) having variable thickness, are to be held. They are the only big cam clamps known that provide convenient means for locating the spindle assembly along the toggle bar. The spindle itself is easily adjusted for clamping height, and can be replaced by a special pressure pad to suit other clamping requirements.



MODEL CAV-1200
Recommended force at end of toggle bar. 1200 lbs. Recommended force 3¼" from front of base. 1900 lbs.

MODEL CAS-1200
This clamp has the additional advantage of permitting the toggle bar to be swiveled around the base to any position within 180°

MODEL CAS-2000
This clamp has the same features as Model CAS-1200, but for 2000 lbs. clamping force.

MODEL CAV-2000—*similar to above but has fixed base.*

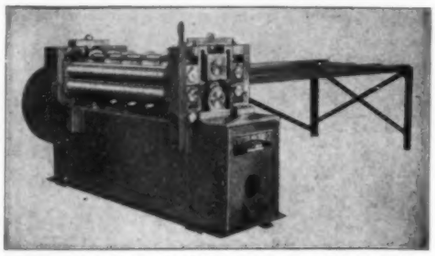
This entire series is also available without cam action (with fixed locking). Catalogued as Models V-1200, S-1200, V-2000, and S-2000. Complete catalog sent on request.

KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN
Western Division • 422 Magnolia Street, Glendale, California

BREVITY—Identify by IEN - 4456 if you write the maker

RAFTER GANG SLITTER

For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street **Belleville 9, N. J.**
COLD ROLL FORMING MACHINES & PRESS BRAKE FORMING DIES

BREVITY—Identify by IEN - 4457 if you write the maker

PEERLESS
HIGH EFFICIENCY GENERAL PURPOSE FRACTIONAL HP PUMPS
EASIEST TO INSTALL, OPERATE AND MAINTAIN

SIZES: ¼ TO 1½ HP • HEADS UP TO 110 FT. • **CAPACITIES:** UP TO 65 GPM
DRIVES: CLOSE-COUPLED ELECTRIC OR FLEXIBLE COUPLED ON COMMON BASE

FEATURES: Designed for vertical, horizontal or intermediate angle installation without affecting efficiency. Motors are drip proof, cool running. Drive shaft is stainless steel. Enclosed impeller. Four positions of volute provide flexibility in connecting piping. Equipped with shaft seal; no packing to change. Water deflector shields motor bearings. Highly efficient; extremely rugged and dependable. Available out of stock at Los Angeles or Indianapolis. Fully described in Bulletin B-2300.

ALSO AVAILABLE IN INTEGRAL HP MODELS UP TO 150 HP AND UP TO 5500 GPM

Write for Bulletin B-2300

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
Factories: Los Angeles, California, and Indianapolis, Indiana.
Offices: New York, Atlanta, Fresno, Los Angeles, Chicago, St. Louis, Phoenix; Dallas, Plainview and Lubbock, Texas; Albuquerque, New Mexico.

BREVITY—Identify by IEN - 4458 if you write the maker

MORE SPEED MORE SUPPORT

SAVE LABOR

PADDOCK BALL-BEARING BAND-SAW GUIDES

Conserve Workmen's Time

Here's a low cost way to reduce Blade Breakage—enable old or new Band Saws to cut more material—protect workmen! PADDOCK GUIDES hold working portion of blade as if in a frame! Ball bearing wheels turning with the blade give friction-free support! Wheels are interchangeable for balanced wear and long life. Write for circulars and prices.

PADDOCK TOOL CO.
Guide Makers Since 1920
1418 Walnut St., Kansas City 6, Mo.

Paddock
BALL-BEARING
BAND SAW GUIDES

BREVITY—Identify by IEN - 4459 if you write the maker

HOW TO *Increase* PRODUCTION OF MELTING COMPOUNDS

• The answer may *not* lie in more or larger compound melting tanks, kettles or pots.

Part of the now-famous "Sta-Warm Method" of increasing production includes (1) analysis of tank-kettle-pot job layout, (2) use of mother tank and similar devices for preheating, (3) efficient distribution of heated compounds to points of application. Most important, too, is the cost factor. The "Sta-Warm Method" includes comparison of quantity, temperature and time-and-distance requirements against known "efficiency norms". *It's surprising how many compound heaters require too many BTUs to reach production level.*

Let Sta-Warm help you step up your melted compound production *efficiently.*

Outline your production problem in a brief letter to . . .

Standard one pint wax dropper *or* 100 gal. melter with tailored accessories

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 4460 if you write the maker

GET ALL 3 with ALL-METAL

CHROMALOX RADIANT HEATERS

Uniform heat at the turn of a dial is yours with Chromalox Electric Radiant Heaters. Fingertip control assures exact operating temperatures for varying needs. Different zones of heat can be had within the same oven by setting up individual controls for each bank of heaters. Chromalox Units operate in low and high ambient temperatures; provide glareless radiation in infrared wave lengths absorbed efficiently by all colors, textures, surfaces. All-metal construction withstands shock, vibration, moisture; eliminates contamination; is safe with volatiles.

TYPICAL TIME and MONEY SAVING USES
• Drying • Dehydrating
• Baking • Pre-Heating
• Heating • Degreasing
and many other applications

For More Know-How Send for Application Reports on Chromalox Radiant Heaters
EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Heating Units Advertisement, Page 5.

CHROMALOX ID-10
ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 4461 if you write the maker

TIME-TESTED TOUGHNESS!

PABCO MASTIPAVE

AMERICA'S NO. 1 LOW-COST LONG-LIFE FLOOR COVERING

"Particularly during World War II, tremendous punishment was taken by the facilities of the Oakland YMCA," declare this organization's officials. "Pabco Mastipave has been a life saver; has more than proved its worth during the past few years.

"It has certainly been a help to our maintenance staff, especially during the war years when our staff was undermanned. We have been completely happy with Mastipave and the way in which it has withstood the heavy use it has received. We believe that for the money there is nothing else on the market to compare with it."

SEND NOW FOR THE FULL STORY OF MASTIPAVE!
PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)
GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."
NAME _____
ADDRESS _____
CITY _____ STATE _____

BREVITY—Identify by IEN - 4462 if you write the maker

HANDLING . . Bundling chain and fork lock for load handling

Source: AMERICAN CHAIN & CABLE CO.
921-31 Connecticut Ave., Bridgeport 2, Conn.

One end of a load chain is anchored by a bolt at the lower left-hand corner of a forged lock housing, as it is shown in the illustration of this new assembly. The chain is passed around a load such as pipe or structural iron. It is threaded through an opening at the right in the forging to reach upward to a lifting hook overhead.

A fork lock is hinged at the upper left-hand corner of the unit so the fork lies against the chain. When load-lifting effort is released and the chain starts to retract, the fork locks it in place and holds the load secure until an operator lifts the fork out of locking position. Four sizes are available for 17/32 to 21/32-in. chain.

BREVITY—Identify by IEN - 4463 if you write the maker

CLEANING . . Flake material stops slime formation in cooling water

Source: MONSANTO CHEMICAL CO.
1702 S. Second St., St. Louis 4, Mo.

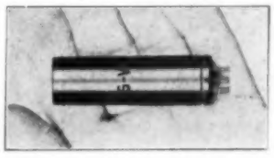
For industrial cooling water

Santophen 45, a technical grade of sodium trichlorophenate, is a new cleaning material supplied in the form of small brown flakes for addition to industrial cooling water circulating in closed circuits. The material dissolves in the water and is toxic to common capsulated slime producers. It carries a chlorophenolic odor and is not recommended where the odor is a factor in equipment operation.

BREVITY—Identify by IEN - 4464 if you write the maker

RELAY . . Time delay unit, adjustable sealed assembly, to 3 minutes

Source: G-V CONTROLS INC.
26-30 Hollywood Plaza, East Orange, N. J.



Delay interval prior to opening or closing a control circuit is provided by this new miniature relay in the company's line of hermetically-sealed timing units. Contacts are opened and closed by a 4-watt coil. They rate 6 amp. on 110-volt 60-cycle ac. Dimensions are ¾ by 2⅝ in. in seated height. The base fits a 7-pin miniature-tube socket.

Adjustment is made by turning a screw located outside of the sealed enclosure for a maximum adjustment over a 5 to 1 range. Maximum interval is 3 minutes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4465 if you write the maker

for SAFE WALKING

FOR USE IN
• HOSPITALS
• HOMES FOR THE AGED

• *WHEREVER SAFETY UNDERFOOT IS VITAL!*

NOFALS provides a lustrous, satiny finish to linoleum, cork, rubber, mastic or sealed wood flooring—WHILE GUARDING AGAINST SLIPS AND FALLS. Beauty-plus-safety is the big feature of this special water emulsion floor finish. *Actually improves in slip resistance under traffic!*

NOFALS is easy to apply; won't jell, whiten out or attract moisture. Ask your DOLGE SERVICE MAN to demonstrate—or write for folder NFWJ251.

Dependable **DOLGE**
WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 4466 if you write the maker

BIG NEW SAVINGS with MACHINE BUNDLING

You make a big saving in material costs the moment you adopt machine bundling — for one paper roll replaces hundreds of costly cartons. Our Model F-6 bundles the packages in dozen and half-dozen lots at speeds up to 24 bundles a minute. Just one operator is needed. Sturdy, durable kraft paper is used. Packages may be arranged in a variety of ways and the machine is easily adjusted for different sizes.

The F-6 is one of several efficient bundling machines we manufacture. Write for literature.

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK · CHICAGO · BOSTON · CLEVELAND · ATLANTA · DALLAS
DENVER · LOS ANGELES · SAN FRANCISCO · SEATTLE · TORONTO · MEXICO D.F.

BREVITY—Identify by IEN - 4467 if you write the maker

BRAND NEW HANDBOOK ON RESISTORS!

Ward Leonard's latest engineering publication

Nearly 200 pages packed with exactly the type of information *you* need on power resistors . . . never before assembled so completely, so handily.

Covers types, characteristics; describes how to select; gives other useful data.

Engineers call it "the finest, most complete job ever done on power resistors".

This handbook is modestly priced at $3.00. Order from WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS · RHEOSTATS · RELAYS · CONTROL DEVICES

BREVITY—Identify by IEN - 4468 if you write the maker

STOP DUSTS

. . . from Any Dust Source

IMMEDIATELY . . . WITH DUSTKOP

Available from Stock . . . 22 Standard Models Pretested . . . 500 to 10,050 cfm.

for

Surface, Tool, Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost *all* kinds of industrial dusts.

Ask for Catalog 605-2. Describe dust problem for recommendation by return mail—no obligation.

Aget-Detroit Co., 401 Main St., Ann Arbor, Mich.

That's a Model 1150; takes all the dust from two 18" wheels. Same unit would handle dust from 3 surface grinders.

BREVITY—Identify by IEN - 4469 if you write the maker

Quick, Easy, Flawless WOOD PLANING

with the STANLEY ELECTRIC PLANE No.J5

Here's the way to zip through wood planing in minimum time . . . leave a smooth, waveless surface. Stanley J5 planes surfaces up to 2½" wide. Adjustable for straight or bevel cuts to 45°, and for depth-of-cut to 3/16". Full 1 h.p. motor drives spiral cutter 18,000 r.p.m. Weight, only 16 lbs. Patented grinding attachment sharpens own cutter. Other Stanley Electric Planes in smaller sizes. Ask your tool dealer about these planes or write for literature. Stanley Electric Tools, 414 Myrtle St., New Britain, Conn.

STANLEY
Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 4470 if you write the maker

To Sneak Profits when You Seal with

Leaks on lines carrying oil (hot or cold), gasoline, kerosene and high pressure steam are a costly waste. Key Graphite Paste provides a perfect seal for these lines. It expands under heat but will not freeze the connection. Joints completely sealed with Key Graphite Paste can be easily disconnected without damage to threads or gaskets. Eliminate expensive leakage with Key Graphite Paste. Listed by Underwriters Laboratories.

Try Key Graphite Paste in your own plant at no cost. Send for liberal free sample.

KEY COMPANY
2651 McCasland Ave.
East St. Louis, Ill.

KEY Company

BREVITY—Identify by IEN - 4471 if you write the maker

FELT! BY THE YARD FELT! BY THE ROLL FELT! IN CUT PARTS

WE MAKE IT . . . WE CUT IT . . . WE SELL IT . . .

All grades • All colors • All textures
All thicknesses • All consistencies

WRITE TODAY FOR FULL DETAILS

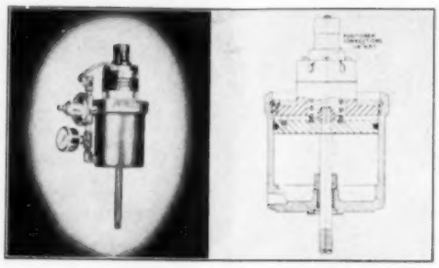
THE FELTERS COMPANY
210-1 SOUTH STREET, BOSTON 11, MASSACHUSETTS
Offices: New York, Philadelphia, Chicago, Detroit, St. Louis, Cleveland
Sales Representatives: San Francisco, Dallas

MAKES THE FELT FOR THE PARTS IT CUTS

BREVITY—Identify by IEN - 4472 if you write the maker

CONTROL . . Piloted air cylinder controls feed, flow, pressure, speed

Source: CONOFLOW CORP.
2102 Arch St., Philadelphia 3, Pa.



Axial movement by air pressure is provided by this new Series B-50 pilot-operated cylinder to position a valve for throttling action, to adjust the setting on a variable-speed transmission, to regulate the stroke or speed of feeding equipment. The assembly is a companion unit to the Rotomotor previously described IEN-9-50. The latter provides rotating control drive under pneumatic pilot actuation. In both cases air connection is made to pilot from pneumatic control instruments supplied by the user.

Series B-50 is designed for air supply pressure to 100 pounds. It is available in 4, 6 and 8-in. piston diameters with stroke to 4 inches. It is capable of repositioning accuracy to .2 per cent of the total travel.

The cylinder is made of cast aluminum. It is machined, honed and polished. The piston, head plate and piston stem are sealed by O-rings. The actuating pilot is connected with the piston movement by a contact spring. The assembly is completed by a reducing valve and pressure gage in a connecting line to the bottom of the cylinder and a line above the reducer into the pilot assembly. Two ¼-in. pipe-threaded openings also are provided for the control-pressure connection.

BREVITY—Identify by IEN - 4473 if you write the maker

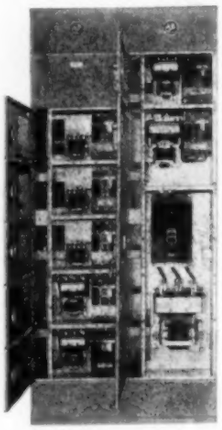
CONVEYING . . Heat resistant belt for operating temperature to 600 deg. F.

Source: IMPERIAL BELTING CO.
1752 S. Kilbourn Ave., Chicago 23, Ill.

Heavy duck is combined with asbestos and special insulating materials in the company's new Super-Insulated Sahara conveyor belting. The belt is able to handle sand and hot castings as they come from a shake-out in a foundry. It is suited for other installations requiring operating temperature to 600 deg F. The belt is available in 5 to 8 plies for normal use and in widths to 60 in. with length as required by the installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4474 if you write the maker



Bulletin 798 Multi-unit Control Centers for Centralized Operations

A-B Quality

Bulletin 798 Multi-unit Control Centers can be assembled in one or more vertical sections containing starter panel units with disconnect switch or circuit breaker connected to a common power bus. The result is a completely enclosed, dead front, floor mounted switchboard, ready for connection to your motors in the plant.

Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 4475 if you write the maker

Now More Positive Protection than Ever Before with the New FLEX-A-FOAM FILTER MASK

Newly designed for maximum comfort and efficiency, it's easier to breathe through and talk through than an ordinary pocket handkerchief . . . yet filters non-toxic dusts as small as 1/25000 of an inch!

- Extremely light in weight—just one ounce complete.
- Self-adjusting to every face size—no interference with eye glasses.
- Simple sturdy design—only four interlocking parts.
- Only respirator made with long-lasting washable filter—outwears throw-away type as much as 100 to 1.

Sample $1.40 postpaid

Write for new descriptive folder

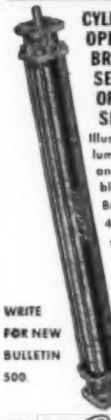
Dust Protection your workers will welcome and *Wear*

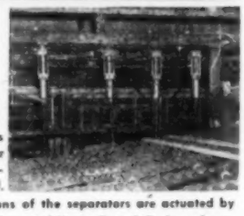
FLEX-A-FOAM FILTER MASK

THE GOGGLE PARTS COMPANY • CLEVELAND 13, OHIO

BREVITY—Identify by IEN - 4476 if you write the maker

Ledeen CYLINDERS IMPROVE THE JOB





CYLINDERS OPERATE BRIDGING SECTIONS OF LUMBER SEPARATOR

Illustration shows lumber separator and grading table in sawmill.

Bridging sections of the separators are actuated by 4 Ledeen Air-Operated Heavy Duty Cylinders, shown suspended from cross beam at far end of separator.

There are Ledeen *medium duty, heavy duty* and *super duty* cylinders for air, oil or water operation ready to help you, wherever you have to . . . push or pull • lift or lower • press or squeeze • tilt or turn • open or close. Standard Ledeen cylinders and mounting attachments are available from distributors' stock in major cities. Special cylinders on order.

LEDEEN CYLINDERS ARE GOOD CYLINDERS

WRITE FOR NEW BULLETIN 500

Ledeen MANUFACTURING CO.
5402 SAN PEDRO STREET • LOS ANGELES 15, CALIF.

BREVITY—Identify by IEN - 4477 if you write the maker

how to keep hot circuits cool....

Trion

DUAL ELEMENT TRIPLE PROTECTION FUSE WITH THERM-A-TRIP

— FUSE WITH A FUTURE

TRION is the coolest operating fuse of any type.
TRION gives instantaneous cut-off on short circuit.
TRION controls rate of rise of recovery voltage.
TRION has longest safe time-lag of any overload protective device.
TRION'S time-delay averages **five times longer** than any renewable or one-time fuse.
TRION starts heavily loaded motors **safely**.
TRION protects against single phasing.
TRION'S watt (power) loss is substantially lower.
TRION'S tripping temperature provides a heat ceiling 500°F. lower than any zinc link fuse.
TRION reduces and controls the heating of switches and fuse clips.
TRION permits the use of switches of lower rating.
TRION keeps hot circuits cool.

A TRION FOR EVERY CIRCUIT

Trions are available in 141 Standard Sizes ranging from 1 to 600 amps for both 250 and 600 Volt circuits. Other sizes for these same voltages range from 1/10 amp to 9 amps. Midget Sizes (¾" dia. by 1½" long) vary from 1/10 amp to 10 amps. **ASK FOR TRION OR WRITE FOR FREE TRION BULLETIN #506-A TODAY.**

"Look to Shawmut for leadership"

THE CHASE-SHAWMUT CO.
386 MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS

BREVITY—Identify by IEN - 4478 If you write the maker

AMAZING, NEW, WATERPROOF, GLASS-REINFORCED PAPER

GLAS-KRAFT

PROVIDES POSITIVE ALL-WEATHER PROTECTION

GLAS-KRAFT is one of the strongest, toughest, most flexible, reinforced papers known. It is the most waterproof reinforced paper available. Contains up to 315 ft. of continuous, specially treated glass yarns swirled into each square foot for all-directional reinforcement. Yarns are waterproof-bonded under heat and pressure between two plies of finest specification Kraft.

GLAS-KRAFT IS VERSATILE

- *Wrapping & Packaging*—Textiles, Machinery, Tires, Paper, Steels, Wire Stock, Cement, Chemicals, Furniture, etc.
- *Storage*—Indoor or Outdoor storage of motors, vehicles, machinery, building supplies and equipment . . . As temporary all-weather tarpaulins.
- *Packing & Shipping*—Unitized loading of freight cars . . . As case liners and shrouds for export and domestic shipping.
- *Building & Construction*—As a vapor barrier or side-wall sheathing, protective floor covering, or over subfill.
- *Concrete Curing*—For concrete floors, driveways, sidewalks and roads.

Glas-Kraft is supplied to the U.S. Government in quantity. It meets JAN-P-125 specifications for barrier wrapping material, Types E-1, E-2, E-3.

GET GLAS-KRAFT

Investigate Glas-Kraft when you want an industrial paper to perform where others fail. Available in rolls up to 96 inches in width. Three grades. We also manufacture the revolutionary new Glas-Tape and Glas-Kraft Sealing tape for the corrugated container industry.

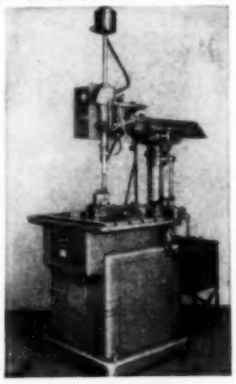
A Better Paper Product By

GLAS-KRAFT, Inc.
LONSDALE, RHODE ISLAND

Write today for sample swatches and prices.

BREVITY—Identify by IEN - 4479 If you write the maker

END SCRAP PROBLEMS WITH THE ELOX M-10 RADIAL ELECTRON DRILL!

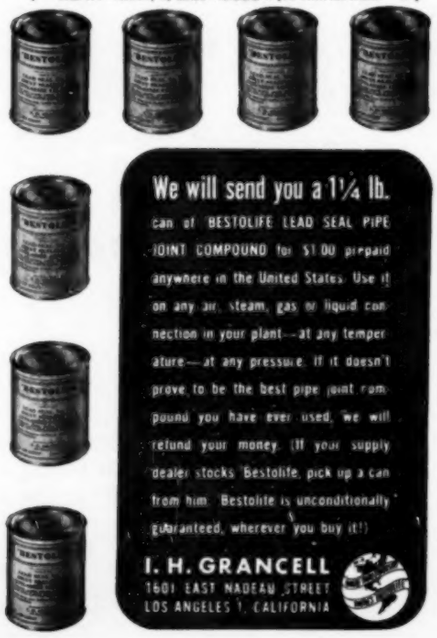


Completely *automatic* and as simple to operate as a drill press the Electron Drill will disintegrate a broken tap, drill, reamer; alter a mold or die; enlarge keyway slots in cutters or dies. Reasons enough why the largest automotive plants use three and four of this model on salvage alone! The Electron Drill cuts diamond hard steel without any special preparation. Cutting speeds and workmanship fully guaranteed.

The ELECTRON DRILL is used and sold internationally.

ELOX CORPORATION OF MICHIGAN
740 N. Rochester Road • Clawson, Michigan

BREVITY—Identify by IEN - 4480 If you write the maker



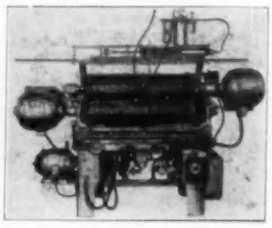
We will send you a 1¼ lb. can of BESTOLIFE LEAD SEAL PIPE JOINT COMPOUND for $1.00 prepaid anywhere in the United States. Use it on any air, steam, gas or liquid connection in your plant—at any temperature—at any pressure. If it doesn't prove to be the best pipe joint compound you have ever used, we will refund your money. (If your supply dealer stocks Bestolife, pick up a can from him. Bestolife is unconditionally guaranteed, wherever you buy it!)

I. H. GRANCELL
1601 EAST NADEAU STREET
LOS ANGELES 1, CALIFORNIA

BREVITY—Identify by IEN - 4481 If you write the maker

POLISHING . . Roll type machine to finish contoured or flat work

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



Cylindrical buffs are mounted on parallel shafts and each shaft is motor driven in this new Model-202 surface-finishing machine. The buffs assemble into rolls measuring 40 in. in length and to 9 in. in diameter. One of the two spindles is connected **hydraulically** or an in-and-out movement that is adjustable between ⅝ and 24 inches. A bar across the front of the machine separates the rolls instantly for loading purposes and as a safety device in case of emergency. Work is positioned between the rolls for flash removal or for any degree of finish required.

BREVITY—Identify by IEN - 4482 If you write the maker

PAINTING . . Latex base material for interior surfaces, dries in an hour

Source: PITTSBURGH PLATE GLASS CO.
634 Duquesne Way, Pittsburgh 22, Pa.

Available in twelve colors

Wallhide Rubberized Satin Finish designates a new interior paint for application by brush, roller coater, spray, on walls and ceilings. Application can be made over old plaster, paint, paper, wallboard, brick, concrete, cinder block, wood or primed metal. The film dries in an hour to a smooth velvet-like sheen. It will not crack or chip and resists wear like a first-class enamel. After drying for several weeks, the surface can be scrubbed without damage to sheen or color.

BREVITY—Identify by IEN - 4483 If you write the maker

CIRCUIT BREAKER . . Outdoor unit, breakers and receptacles in housing

Source: HEINEMANN ELECTRIC CO.
100 Plum St., Trenton 2, N. J.

One to four magnetic **breakers** are available in combination with one or two receptacles with ratings in any combination to 50 amp. each on 110-volt ac. In this new outdoor service equipment. The weather-proof housing measures 6¾ by 8½ by 15 inches. The assembly is designed particularly for use in construction work and outdoor locations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4484 If you write the maker

The "One Best Way" for Many Materials-Handling Jobs

MORRIS *Centrifugal* SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

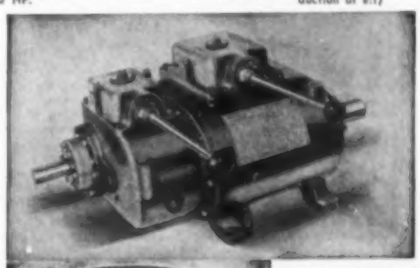
MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 4485 If you write the maker

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills, Bullard vertical turret lathes, etc. CAPACITY 30 HP.



(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever (automotive type). Ratios: 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys and motors from stock.

up to 50 h. p. WESTERN TRANSMISSIONS

BREVITY—Identify by IEN - 4486 If you write the maker

Specific Problem... Specific Answer!

YOU'LL GET MORE DONE WITH A HOIST THAT'S EXACTLY RIGHT...

...for continuous quick-lifting power

YALE LOAD KING ELECTRIC HOIST

This rugged, moderately priced new YALE hoist can stay on the job 'round the clock, lifting at speeds from 9 to 41 F.P.M.! One arm push-button control makes it easy to spot loads precisely. In wire rope or chain models with trolley, lug or swivel hook suspension.

Capacities: ⅛ to 2 tons

...for dependable general-purpose lifting

YALE MIDGET KING ELECTRIC HOIST

Here's a YALE money-saver that fills the bill perfectly on a thousand-and-one lifting jobs. Get speedy lifting, fast, accurate spotting of loads. One-hand bar control leaves operator free to guide loads as he lifts or lowers. Non-fracturing steel load hook. Trolley or swivel hook suspension models available, AC or DC.

Capacities: ⅛ to 1½ tons

and there are many more! A YALE HOIST FOR EVERY JOB. Get all the facts today!

The Yale & Towne Manufacturing Co., Dept. 365
Roosevelt Boulevard & Haldeman Avenue
Philadelphia 15, Pa.

Please show me how I can step up production with YALE hoists.
_____*Please have your local representative call on me.*
_____*Please send me FREE detailed literature.*

Name_____
Company_____
Street_____
City_____ State_____

YALE is the registered trademark of The Yale & Towne Manufacturing Co.

YALE MATERIALS HANDLING EQUIPMENT

THE YALE & TOWNE MANUFACTURING COMPANY

In Canada write The Yale & Towne Manufacturing Company, St. Catharines, Ont.

BREVITY—Identify by IEN - 4488 if you write the maker

Rolling Steel Doors

Manually • Mechanically • Power Operated

No other type of door offers as many desirable features as a good Rolling Steel Door . . . open or closed, they occupy no usable space inside or outside the opening. All-metal construction assures permanence and a lifetime of continuous trouble-free service. Push-button controlled vertical roll-up action provides the quick, timesaving door operation demanded today by all industrial and commercial concerns. When you buy Mahon Rolling Steel Doors you get the latest developments in doors of this type — comparison will convince you. See Sweet's File for complete information, or write for Catalog No. G-50.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

BREVITY—Identify by IEN - 4489 if you write the maker

Well Known for Dependability

San Francisco Cable Cars are world renowned for conveying folks up and down that hilly city in their unique and dependable manner.

WEBB Towveyor
Floor Type Towing Conveyor

Faster, more efficient is this Webb System for handling packages, boxes, barrels, tote boxes, parts, etc.

With a continuous chain conveyor running in a steel slot below the floor, nothing is above to obstruct. It is fast—operator just drops pin in slot—chain picks up load automatically.

Visit Our Booth, #219, International Amphitheater, Chicago, April 30—May 4.

Ask for Catalog #51

JAMES WEBB CORPORATION
MANUFACTURERS OF OVERHEAD AND FLOOR TYPE CONVEYORS
OFFICES IN PRINCIPAL CITIES
8915 ALPINE AVE.
DETROIT 4, MICH.

BREVITY—Identify by IEN - 4490 if you write the maker

STOP ACCIDENTS
with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

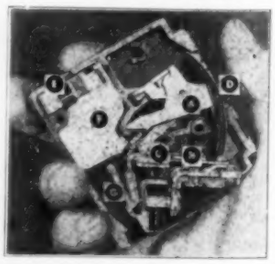
WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED "CONTOR-TAPE" · MARKS & STENCILS
W. H. BRADY CO.
1635 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 4491 if you write the maker

CIRCUIT BREAKER . . Plug in design for load center use, 15 to 50 amperes

Source: TRUMBULL ELECTRIC MFG. CO.
39-43 Woodford Ave., Plainville, Conn.



Type TQL designates a new plug-in design of circuit breaker available in five ratings between 15 and 50 amp. on 110-volt ac. in single-pole single-throw design. The breaker will interrupt 5,000 amp. on the 110-volt circuit. It is equipped with handle extensions that can be tied together for two-pole operation. Load-center assemblies with 1 to 20 circuits are available from stock.

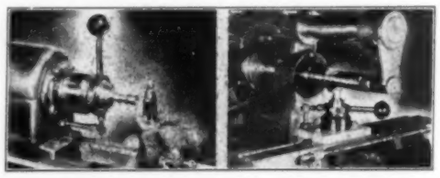
The breaker is tripped by thermal action of a bimetal element responding to an overload condition but remaining without action on harmless temporary overloads. The mechanism also responds magnetically to instantly open the circuit in case of a short. Individual units assemble inside an opening measuring 2⅞ by 1 by 3 inches.

Quick break and quick make are by spring action in a movable contact arm A. Time-delay thermal action at B protects against excessive overload. Magnetic action takes place at C to open in the event of a short. Opening is accompanied by movement of the handle D to mid-position between "off" and "on" to signal a tripped position. Silver-plated copper contact E, arc chute F and exhaust chamber G contribute to satisfactory action. Assembly is sealed against tampering.

BREVITY—Identify by IEN - 4492 if you write the maker

CHUCK . . Draw collet design for use on machine spindles or tables

Source: STALLION MFG. CO.
2017-19 N. Halsted St., Chicago 14, Ill.



Five sizes are available in a new draw-collet chuck to hold work in an overall range between 1/64 and 1¾ in. in diameter or included sections that are square, hexagon or other symmetrical shape. The smallest takes collets from 1/64 to ½ in., measures 2⅜ in. in body diameter by 2¾ in. in overall length, weighs 2 lb. and lists at $69.50. The largest has a range between 1/32 and 1¾ in. with body diameter at 4½ in., overall length at 3½ in., approximate weight at 6½ lb. and list price at about $168.

The collet is opened and closed by lever action while standing or rotating. The main housing has a flange base and four mounting screws in arrangement suitable for assembly on a lathe spindle or in a base plate for a machine-tool table.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4493 if you write the maker

Power positioning of material increases production in sheet feeding operation.

perhaps
YOUR PRODUCTION CAN BE INCREASED THROUGH POWER POSITIONING OF TOOLS AND MATERIALS

PORTELVATOR®
has supplied the answer to others.

Start a beneficent chain reaction now; write for
BULLETIN P-507

Twenty-five ton capacity, self loading, self discharging die transfer table.

THE Hamilton TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

BREVITY—Identify by IEN - 4494 if you write the maker

when the welder must wear a Hard Hat . . . give him a

CESCO Dual Protector

FOR Arc Welding

• Consists of choice of CESCO Helmets and Fiberglas Hat. Rustproof, adjustable, easy-tilt mechanism holds shield in any position. Spring clip connectors permit *fast, easy detachment* of shield from hat which can be worn separately.

FOR Gas Welding

• A combination of Model 542 CESCO *Speed-Shift* Goggles and Fiberglas Hat. Ball-and-socket mechanism for quick flipping of goggles onto hat or into position. Goggles can be flipped to top of hat when wearer does other work.

NEW CESCO DUAL SKULL AND EYE PROTECTORS

FIBERGLAS HAT with CESCO Helmet or No. 542 Goggles. Completely adjustable units. Hat is light and cool . . . safer than stainless steel . . . waterproof. Can be worn separately. ***Write** us for literature today.*

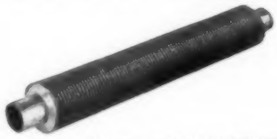
CHICAGO EYE SHIELD CO. • 2336 Warren Blvd., Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 4495 if you write the maker

For efficient heat transfer
"Ro-Fin" Tubes



There are nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING in production! Available in straight length, coils, or U-bends . . . with or without threaded end connections . . . or to be used with standard flare connections. "Ro-Fin" Tubes for efficient heat exchange are used and specified by nearly all large nationally known manufacturers!

For refrigeration condensers • fluid recovery condensers • diesel engine cooling • concealed radiation convectors • steam condensers • fan-type unit heaters • all heat transfer work

Write for information on your heat transfer problems:

ROME
TURNEY RADIATOR COMPANY

200 East Front Street • Rome, New York

BREVITY—Identify by IEN - 4496 if you write the maker

Don't Say IT CAN'T HAPPEN

Unavoidable operational impacts as well as careless handling quite often subject portable electrical connectors to conditions as bad as the scene pictured above. When this happens many apparently good connectors fail quickly or develop loose contacts and insulation cracks.

Not JOY Portable Plugs and Sockets however . . . they're too sturdy to mind everyday abuse. Molded of Neoprene rubber, as integral units to their cables, they can't crack or shatter, and are highly resistant to the deteriorating effects of grime, fluids, humidity and temperature changes.

Write for DESCRIPTIVE BULLETIN TODAY

It will pay you to investigate the complete JOY Connector line before placing your next electrical connector order.

SEND OUT CATALOG IN SWEET'S FILE

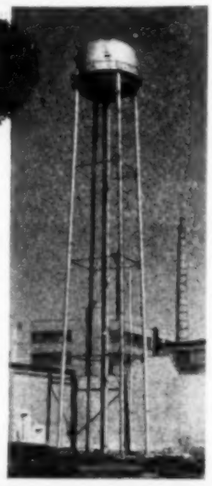
749.1

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., SARNIA, ONTARIO

1851-1951—100 Years of Engineering Leadership

BREVITY—Identify by IEN - 4497 if you write the maker

For Safety's Sake



A Horton elevated water tank should be a prime consideration in your plant fire protection system. This private water supply will serve only you 24 hours a day—7 days a week.

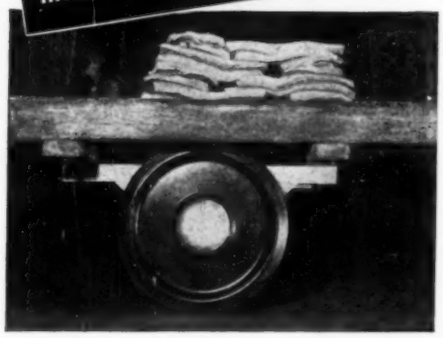
Horton ellipsoidal-bottom tanks are built in capacities from 15,000 to 500,000 gallons. When requesting quotations, state capacity required, height to bottom, location and type of insurance carried.

Right — A 75,000 gallon Horton tank at the United States Tobacco Company plant in Chicago, Ill.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • Salt Lake City
San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

BREVITY—Identify by IEN - 4498 if you write the maker

Better rubber products are made with Du Pont NEOPRENE



Four years' service in meat packing plant proves value of neoprene solid tires

Ordinary solid tires weren't standing up in a meat packing plant. Contact with animal fats, grease, oil, fatty acids and processing chemicals softened them. Temperature extremes . . . +180° F. in smokehouses to −20° F. in freezing tunnels . . . did additional damage. Sanitary requirements . . . cleaning with live steam, hot water and detergents . . . took a further toll. Then tires made of Du Pont neoprene were tried. After four years in this abusive service, *not one tire failure* has been reported!

This is typical of neoprene's service record in thousands of resilient products for the toughest industrial uses. For neoprene *retains* its original toughness and strength under conditions that quickly ruin ordinary rubber.

That's why leading rubber goods manufacturers use neoprene for their finest products. While Du Pont makes no finished goods of neoprene, your rubber goods manufacturer or distributor will gladly tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Full of interesting stories. New, unusual applications of neoprene to build new products . . . improve old products . . . reduce maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division D-5, Wilmington 98, Delaware.

Tune in "Cavalcade of America," Tuesday nights—NBC coast to coast

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 4500 if you write the maker

MOTOR . . Geared head induction unit, 2 to 15 hp., with disc type brake

Source: STERLING ELECTRIC MOTORS INC.
5399-03 Telegraph Road, Los Angeles 22, Calif.

New assembly of the company's Slo-Speed geared-head totally-enclosed fan-cooled motor includes a disc-type brake that can be supplied for starting or holding duty. The brake as well as the motor is totally enclosed in a dust-tight housing to make the assembly suitable for use in atmospheres containing dust, vapor or other injurious foreign matter. Ratings range from 2 to 15 hp. Output speeds are 30 to 280 rpm. as specified. Excessive temperature is prevented in continuous operation by an internal fan that circulates air inside the motor and by an outer fan which passes cooling air over the housing.

Bearings are mounted with labyrinth seals. They are ball-bearing design with permanent lubrication. The motor employs the company's patented Herringbone rotor.

BREVITY—Identify by IEN - 4501 if you write the maker

FIRST AID . . Plastic surgical tape is adhesive, water proof, oil resistant

Source: ARNAUD CORP.
17 John St., Room 1408, New York 38, N. Y.

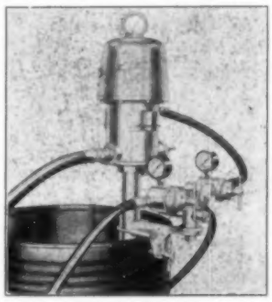
Range of sizes made in England

New adhesive surgical tape of polyvinyl plastic has a coating that contains zinc oxide. The tape is strong, waterproof, washable, oil-resistant, non-fraying and light. It is flesh colored, adheres closely and remains presentable in service for a considerable time.

BREVITY—Identify by IEN - 4502 if you write the maker

PUMP . . Pneumatic piston design delivers viscous materials to spray

Source: GRAY CO.
50 Grace Square, Minneapolis 13, Minn.



Sound deadeners, corrosion preventives, calking compounds, roofing materials, heavy viscous materials are picked up from original containers by this new pneumatic pump and are delivered to spray guns or to extruding equipment. The pump applies in 100 or 400-lb. drums and in bucket containers to forward the materials through a hose line to the gun and back again to the container in a closed circuit. Operation is on 20 to 175 lb. of air pressure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4503 if you write the maker

EXTRA Hand Protection at Lower Cost

PIONEER **STANZOILS**

Straight or curved finger styles

Non-slip fingers and palm—grip wet oily things as if dry

DuPont milled neoprene—long lasting, resistant to oils, acids, liquids

Greater tensile strength—greater tear resistance

N-51

Increase working efficiency and workers' hand comfort with PIONEER Stanzoils—for greater production, fewer injury claims. Stanzoils are made of *milled* neoprene exclusively—assures unequalled tensile strength, tear resistance. Their non-slip grip and efficient fit give workers new assurance and speed. Complete line of styles, sizes, weights, and colors. Write today for complete catalog.

Synthetic Rubber Division

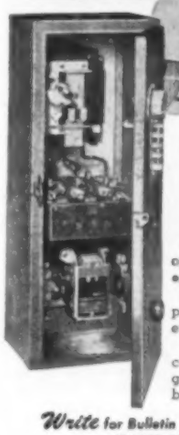
The PIONEER Rubber Company
635 Tiffin Road, Willard, Ohio • Los Angeles

STANZOIL PIONEER

OVER 30 Years OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN - 4504 if you write the maker

NEW DESIGN FEATURES in this SQUARE D CIRCUIT BREAKER COMBINATION MOTOR STARTER



● Newly designed circuit breaker operating mechanism gives **increased operator safety.**

New design feature, added to time-proven magnetic starter, assures **even longer life.**

Thermal-*(coilless)* Magnetic Circuit breaker is non-tamperable and gives **repeat** protection. Nothing to burn out—nothing to replace.

Write for Bulletin 8539. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin

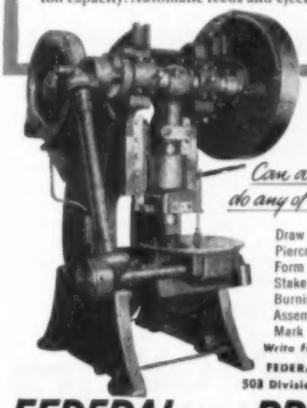
Ask Your Electrical Distributor for Square D Products

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 4505 if you write the maker

For fast, accurate handling of many operations—safely!

If you have a problem of faster press room production, Federal Dial Feeds may be your answer. These rugged mechanical presses are showing the way to faster, safer, precision work to manufacturers everywhere. Carefully built of finest materials in six to 79 ton capacity. Automatic feeds and ejectors if desired.



Can a DIAL FEED do any of these for you?

Draw	Stamp
Pierce	Punch
Form	Crimp
Stake	Wire
Burnish	Broach
Assemble	Rivet
Mark	Burr

Write for new catalog
FEDERAL PRESS CO.
503 Division St., Elkhart, Ind.

FEDERAL DIAL FEED **PRESSES**
26 YEARS OF QUALITY CONSTRUCTION

BREVITY—Identify by IEN - 4506 if you write the maker

"TOUGH OR UNUSUAL CABLE INSTALLATIONS USUALLY TURN OUT TO BE OKONITE"

. . . today more than ever this Okonite experience can help you solve your electrical cable problems.

For ordinary—or extraordinary—electrical circuit requirements, Okonite has developed over the years a wide choice of cable designs. With proved insulations and protective coverings engineered to give circuit security and longest life in every kind of service, Okonite cables assure you of true economy.

Why not take advantage of this wealth of Okonite experience to help you find the best answer to your electrical cable needs? Your Okonite representative will be glad to recommend the cable best suited to your requirements.

For an interesting brochure that illustrates eight case histories where Okonite engineering solved difficult cable problems, write for Bulletin IE-2096, to The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE *insulated wires and cables*

BREVITY—Identify by IEN - 4507 if you write the maker

FEEDING LIGHT BULBS OR ROCK

Whether your feeding problem requires the gentle, rubber-coated touch such as provided by the model above handling light bulbs, or calls for the heavy tonnage flowing of rock, coal, etc. — there's a Syntron Feeder to do the job efficiently.

SYNTRON

"Vibra-Flow"

VIBRATORY FEEDERS

With Variable Control of Rate of Flow

WILL HANDLE most all types of bulk materials — fine, lumpy, hot, cold, dry, damp, abrasive. AT variably controlled rates from pounds to hundreds of tons per hour. TO mixers, blenders, belts, ovens, crushers, screens, packaging machines, etc. WITH very low maintenance costs due to absence of wearing parts.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 4508 if you write the maker

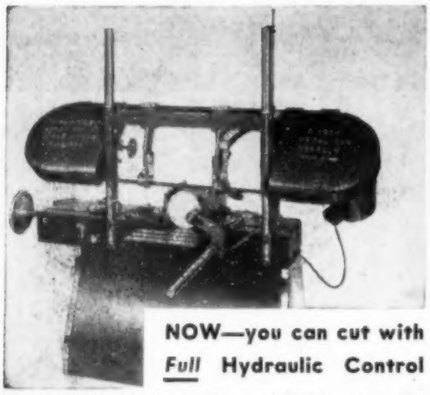
MARSCHKE SWING FRAMES ARE DIFFERENT!

Size for size, Marschke Swing Frame Grinders are heavier than any other machine on the market. This extra weight is no accident — it's there — in the right places — to eliminate *vibration*, the "wheel eater." Marschke swing frames give you better two-way balance . . . smoother spindle rotation: bearing seats are *precision ground and honed* to assure perfect spindle alignment and bearing fit. These are only a few reasons why Marschke grinders are the best money can buy.

An inquiry will bring you interesting data.

VONNEGUT MOULDER CORPORATION
1827 MADISON AVE. • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 4509 if you write the maker



NOW—you can cut with *Full* Hydraulic Control

No binding "jack knife" action here! The new W. F. Wells saw is a sensible approach to accurate, low cost cutting — perfected by the pioneers in band saw manufacturing. Unit feeds down smoothly, evenly on the job. BOTH speed of descent and pressure on blade can be selected and hydraulically controlled.

Unlike other metal cutting saws that are supported on their blades, the W. F. Wells unit carries and supports its blade. Result: trouble-free operation, more economical performance (users report several times longer blade wear).

Model M (pictured) has 18" clearance under blade, vise swiveling 45° in either direction, and numerous other outstanding features. Coolant system for wet cutting and other accessories available as described in FREE catalog.

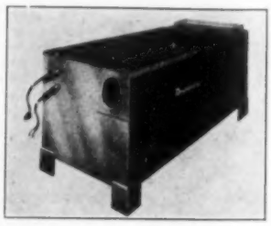
WRITE TODAY FOR COMPLETE INFORMATION

W. F. WELLS & SONS
Three Rivers, Michigan

BREVITY—Identify by IEN - 4510 if you write the maker

DRYING . . Silica gel equipment removes excess moisture from a room

Source: DRYOMATIC CORP. OF AMERICA
810-14 N. Fairfax St., Alexandria, Va.



Wet air from an enclosed area such as a storage room or processing department, where moisture must be controlled, is drawn into this new Model-100 machine and is passed through compartments containing a mixture of activated alumina and silica gel. The moisture is adsorbed and the dry air is returned to the area being served. The new machine is a larger assembly of the one previously described IEN-6678-48. It has capacity to serve 25,000 cu. ft. of enclosed space. It can be installed in this space, or adjacent to it with duct connection. List price is $594.

The housing measures 45 by 16 by 19 in. and encloses three separate chambers each equipped with a power-driven fan, a quantity of the moisture-adsorbing material and an electric heating element. Incoming air, containing moisture, is passed through a dust filter and then through two of the three chambers for removal of the moisture and return of the air to the space served. The third chamber is connected to a reactivation air intake from outside the space and at the same time its heating element circuit is closed. The combination of air and heat removes moisture from the adsorbing material and carries it in an outlet passage to an outside exhaust point.

Automatic controls periodically change the air flow so one after another of the three chambers is connected for reactivation and then is returned to drying duty. At 70 deg. F. and 35 per cent relative humidity, the water-removing capacity is 29¼ lb. per day for the new machine.

BREVITY—Identify by IEN - 4511 if you write the maker

LIGHTING . . Cold light lamp is flashed by discharge from capacitor

Source: KEMLITE LABORATORIES
1821 W. Grand Ave., Chicago 22, Ill.

Flash illumination suitable for photographic and stroboscopic work is produced by capacitor discharge through the gas-filled coil in this new lamp. There is no time lag that can be measured. The lamp shown in the illustration is typical of the unit the company is prepared to supply to specification for operation ranging overall between 400 and 5,000 volts. Lowest intermediate range is 400 to 600 volts. Highest is 2,500 to 5,000 volts.

A grid-controlled assembly for 400 to 600-volt operation and power rating of 40 to 150 watt seconds lists at $10. A similar grid-controlled unit with power rating at 500 to 5,000 watt seconds for operation on 2,500 to 5,000 volts lists at $62.40. A feature in the construction is that the ignition coil or "trigger" is located within the lamp housing.

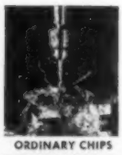
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4512 if you write the maker

NEW *Commander* DRILL CHIP BREAKER

Get these COMMANDER DRILL CHIP BREAKER benefits now:

- Faster Drilling
- Deeper Holes
- Better Holes
- Longer Drill Life
- Safer, Cleaner Work
- REDUCED DRILLING COSTS



ORDINARY CHIPS

CHIP BREAKER CHIPS

Your nearby COMMANDER Distributor has the Drill Chip Breaker. Write for his name, full details and illustrated circular.

Commander MFG. CO.
4219 W. Kinzie Street • Chicago 24, Illinois

Product of *Commander* Builder of Production Tools

BREVITY—Identify by IEN - 4513 if you write the maker

Nutting FLOOR TRUCKS WHEELS CASTERS

"I'll Keep Things Moving For You!—The Boys all like my easy rolling style"

says the Nutting Trucker

A Great Variety of Standard Types

Save lost time, eliminate bottlenecks and wasted motions —increase production capacity by stream-lining handling of material with the type of Nutting Trucks suited to your work. For quicker delivery a great variety of standard types are available—bar handle, stake, platform, 2-wheel, box, rack, shelf and many others. Also rubber tired wheels and casters of all sizes for any truck.

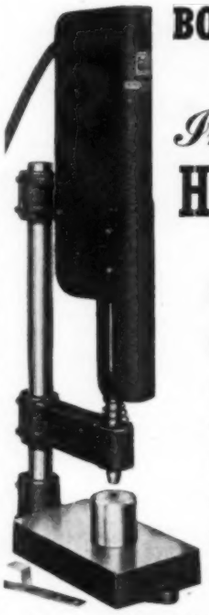
Look in your classified phone directory for your local Nutting representative. If not listed write us stating kind of trucks you need.

Write for Bulletin 49G

over 60th Year

NUTTING TRUCK AND CASTER COMPANY
2012 DIVISION STREET, FARIBAULT, MINNESOTA

BREVITY—Identify by IEN - 4514 if you write the maker



BOOST OUTPUT with *Impact* AIR HAMMER

the efficient modern method for

PUNCHING . . . . RIVETING
ASSEMBLING . . EMBOSSING
FORGING . . . . . FORMING
PEENING . . . . . MARKING
CRIMPING . . . . . CUTTING
BLANKING . . . . . COINING

Ready . . . Mead's new air-powered Impact Hammer . . . weighing only 27 pounds . . . yet having a wallop like a pile-driver! One of its outstanding applications is multiple piercing of large metal sheets before or after forming. It can punch holes as close together as 1¾" on centers. Value of the impact readily adjusted from 4,500 pounds down to only a few ounces. Set ups are quick, easy. Besides innumerable punching operations, with suitable attachments it is capable of upsetting rivets, blanking out soft materials with knife dies, light coining, forging operations, etc. Get complete facts on this versatile, handy new tool and other Mead Air Power devices. Write for Catalog.

MEAD AIR OPERATED DEVICES save precious man-hours!

CATALOG READY
Send for copy of our new Air Power Catalog illustrating, describing many new man-and-money-saving devices.

MEAD SPECIALTIES COMPANY
4114 NORTH KNOX AVENUE
DEPT. EA-51 • CHICAGO 41, ILL.

BREVITY—Identify by IEN - 4516 If you write the maker

Everyone Can Count on VEEDER-ROOT

Yes, this time as before, every arm of the service counts on Veeder-Root in some way or other. The counters shown, for instance, supply figures that radarmen readily translate into vital information.

And there are scores of other Veeder-Root Counters, standard and special, electrical and mechanical, that "talk the language" of more military and civilian jobs than you can shake a slide-rule at!

VEEDER-ROOT INC., HARTFORD 2, CONN.

BREVITY—Identify by IEN - 4517 If you write the maker

RAMSCO

FREE TURNING

BALL BEARING SWIVEL FITTINGS

FOR LIQUIDS, GASES, STEAM, AND OTHER CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION SERVICE.

360° FREE ROTATION—1, 2 AND 3 PLANES

Your particular piping problems solved. You name it—we have it. Over 500 sizes, types, styles. Sizes: ⅜" to 14" low pressure; ⅜" to 6" high pressure. Corrosive service or steam fittings 1000 psi. and temp. to 750°F., asbestos or Teflon packed. Low pressure fitting to 1000 psi. and temp. to 225° F. High pressure fittings to 15,000 psi. and temp. to 225° F. Gear driven types available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at left, threaded, flanged or weld ends.

RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

RAMSCO

BREVITY—Identify by IEN - 4518 If you write the maker

couplings . . . that assemble fast . . . hold tight . . . seal positively

Joining tubes and ducts is usually accomplished with flanges requiring screws and bolts, or with threaded couplings. These are often difficult to assemble and disassemble, expensive to machine or undesirably heavy. Marman V-Band Couplings overcome all these objections. These carefully engineered devices employ positive clamping action around the joint with a quick acting screw takeup. They go on and off fast, are light in weight and require only a simple beaded or flanged end to provide a rigid high-strength seal.

Suitable flanges to accommodate a V-Band Coupling can be made integral with or added to the tubing or ducts to be joined. Rolled sheet metal flanges or machined flanges are equally adaptable. The joint can be used with or without a gasket.

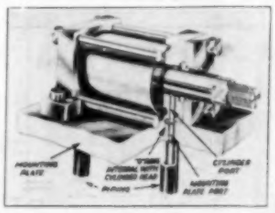
Our catalog tells more . . . just write Dept. I-5

MARMAN PRODUCTS CO. INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

BREVITY—Identify by IEN - 4519 If you write the maker

CYLINDER . . Hydraulic or pneumatic for assembly on flat plate or manifold

Source: MILLER MOTOR CO.
4025-29 N. Kedzie Ave., Chicago 18, Ill.



New design of the porting in the company's lines of hydraulic and pneumatic cylinders permits assembly of one or a number of the cylinders on a flat plate or manifold. O-rings seal the connection. The flow passages extend down through the plate to pipes permanently connected on the opposite face. The O-ring is preassembled into the cylinder so field application is not required.

Installation, removal and replacement of individual cylinders are materially simplified. The construction is available for any sizes of cylinder in the company's line which covers a range of piston diameters from 1½ to 12 inches.

BREVITY—Identify by IEN - 4520 If you write the maker

FLOORS . . Asphalt patch material for quick repair on old concrete, wood

Source: BRIDGES PAVING CO.
1049-13 Central Industrial Drive, St. Louis 10, Mo.

Packaged in 55 gal. drums

Ready Patch is a new factory-mixed quick-setting material developed by the company's Bitucote Products Division for repair work on concrete and wood floors. It is ready to use as it comes from the container. It requires no heating or mixing. It is tamped into place and is immediately ready for resumption of traffic. The patch will not curl under heavy loads. It bonds to concrete and wood, can be feather-edged.

BREVITY—Identify by IEN - 4521 If you write the maker

MARKING . . Steel type holder for use in a press, is slide design

Source: M. E. CUNNINGHAM CO.
99 E. Carson St., Pittsburgh 19, Pa.

A slide that rides in and out at the front of this new holder permits removal of the line of steel type for change without removing the main holder from its set-up in a press. The arrangement also protects the operator since it is not necessary for him to put his hands between the punch and die.

The slot in which the type is positioned can be made curved or in a straight line. It takes shouldered type which drops into place through the back of the slide unit in a straight-line design. Tapered type is equipped for curved contours. The holder is known as Model PH-50. It is available to specification for type size and for the press in which it is to work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4522 If you write the maker

NOW IN OUR NEW HOME

B. F. McDONALD CO.

★ New Location ★ New Facilities
★ Enlarged Capacity

Here's our new home—more than twice the size of our old plant and built to assure you that McDonald safety products will be available in the increased quantities that your growing preference demands. It's a fitting tribute to the firm with 19 years of safety-on-the-job progress.

note change of address

B. F. McDONALD CO.
5721 West 96th St.
LOS ANGELES 45
The West's Safety Headquarters

HOME OF THE SAFETY STARS FOR 1951
McDonald SAFE-T-HAT • McDonald DUSTFOE RESPIRATOR
McDonald KANISTER-KIT
McDonald SURT-WELD LENS
McDonald REVERSALARM • McDonald SNAKE-BITE KIT

BREVITY—Identify by IEN - 4523 If you write the maker

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

BREVITY—Identify by IEN - 4524 If you write the maker

TRICO "KLIPLOK" CLAMPS and "POWDER-PACKED" FUSES

Save
- POWER
- FUSES
- CLIPS

CUT MAINTENANCE COSTS

The PERFECT combination that INSURES peak production.

"KLIPLOK" CLAMPS

"Lock Like A Vise" and "stay put". There's no chance for faulty contact between fuses and clips when "Kliploks" are applied.

They reduce:
- Premature Fuse Blowings
- Unnecessary Shutdowns
- Lost Production
- Unnecessary Repairs
- Doubling-up Fuse Links
- Fire & Accident Hazards

TRICO "Powder-Packed" RENEWABLE FUSES

The ONLY fuse with a "Custom-Built" . . . "Powder-Packed" Renewal element that provides:
- Three Times the Fuse Service
- Low-resistance Contacts
- Tamper-proof Protection
- Guaranteed SAFE Time-lag
- Link Protection and Support
- Lifetime Outer Parts

WRITE FOR BULLETINS NO. 1 AND 6

TRICO FUSE MFG. CO. Milwaukee, Wis.

BREVITY—Identify by IEN - 4525 If you write the maker

An important message to users of tin base babbitt:

HOW TO SAVE UP TO 50% ON BABBITT COSTS

Once again tin base babbitt is scarce . . . and prices are high. You can beat this high price and delivery problem—today—with a babbitt costing about HALF as much per pound . . . N-B-M No. 397 Silver Babbitt. Performance?

Leading Diesel Producer*—*"Doing an excellent job."* (On diesel engine bearings, for the past 6 years).

Large Cement Plant*—*"Given us 4 to 5 times the service."* (Of formerly used tin-base babbitt).

N-B-M Silver Babbitt has been thoroughly service proved—and it's *available for immediate delivery from current stocks.* Here's a chance to make big savings in your plant . . .

Write today for quotations and service data

*Name on request

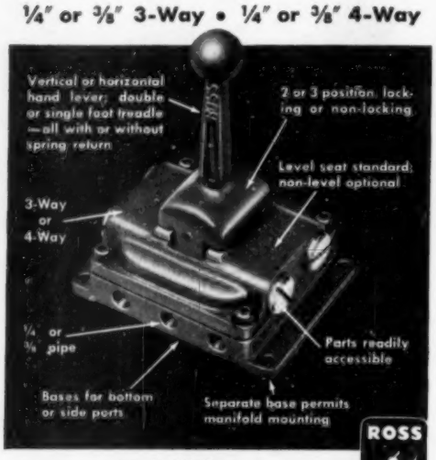
AMERICAN Brake Shoe COMPANY — NATIONAL BEARING DIVISION
1951 Manchester Avenue • St. Louis 11, Mo.

PLANTS IN: ST. LOUIS, MO. • MERCERVILLE, PA. • NILES, OHIO • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.

BREVITY—Identify by IEN - 4526 If you write the maker

A new ROSS Valve at a new LOW PRICE

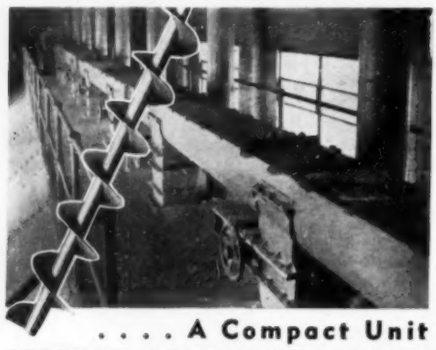
¼" or ⅜" 3-Way • ¼" or ⅜" 4-Way



Write for full information

ROSS OPERATING VALVE CO.
120 E. GOLDEN GATE AVE. DETROIT 3, MICHIGAN

BREVITY—Identify by IEN - 4527 If you write the maker



. . . . A Compact Unit JEFFREY SPIRAL CONVEYOR

Covered type shown handles dusty materials. No return strand. Capacities vary with size of conveyor. Six types — Sectional, Helicoid, Mixer, Cut Flight, Ribbon and Cast Iron. Uniform strength, perfect fit, true alignment. Catalog No. 803 describes many uses. Send for it.

JEFFREY
THE JEFFREY MANUFACTURING CO.
914 N. Fourth Street Columbus 16, Ohio

BREVITY—Identify by IEN - 4528 If you write the maker

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Without Special Tooling — Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade.

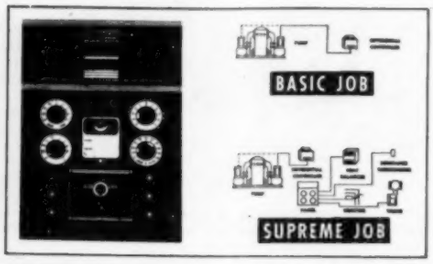
No. 5 Air Model — FIVE-IN-ONE-TOOL
IT BENDS FLAT AND TUBULAR STOCK INTO ANY SHAPE. CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

BREVITY—Identify by IEN - 4529 If you write the maker

HEATING . . Variable vacuum equipment employs electronic temperature control

Source: C. A. DUNHAM CO.
402 W. Madison St., Chicago 6, Ill.



Electronic action to indicate and control temperature changes, in operation of the company's space heating equipment, now replaces a galvanometer that was formerly the actuating element in the control panel forming a part of a complete heating installation. This new panel applies in an assembly known as Supreme Job.

A complete assembly consists of the two-pipe steam-heating piping, the pump by which variable vacuum is set up, a differential controller, the required traps and radiator valves. The control equipment is made up of a heat balancer, selector, resistance thermometer, control valve and the electronically-equipped control panel. A continuous flow of steam is maintained in exact proportion to the weather demand by the control equipment to hold room temperatures within close limit.

The control panel is the central operating station at which settings can be made and from which indication of heating conditions can be read. The panel also can be provided with a time switch to lower temperature at night, on holidays and over week-ends and to raise it again when normal temperature is required.

Bulletin 509, "Vari-Vac Differential Heating", 44 pages, presents diagrams and accompanying description of the various forms in which the equipment is available. It includes illustrations and specifications of the elements making up an assembly, engineering data, typical layouts.

BREVITY—Identify by IEN - 4530 If you write the maker

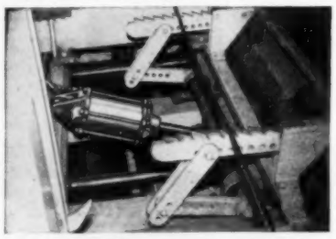
TRUCK ATTACHMENT . . Extension provides fork lift to clear 197 in.

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.

Auxiliary upright with its own hydraulic piston has been developed in 2,000 and 3,000-lb. capacity for removable application on the standard 83-in. upright on the company's 2 and 3-ton fork-lift trucks, as shown in the illustration. The attachment applies on the main upright to ride up and down on it and in turn to provide vertical ways to mount the fork assembly. Maximum lift height then clears 197 in. above the floor. The attachment cylinder takes a separate control so it can be made operative as required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4531 If you write the maker



Cant Flipper actuated by NOPAK Model "E" Cylinder

LUMBER and VENEER MILLS Find Many Uses for NOPAK Valves and Cylinders . . .

The application pictured is typical of hundreds in the lumber and woodworking industries. Lifting, tilting, pushing, pulling and clamping are simplified and accelerated through proper application of NOPAK Valves and Cylinders.

In modernizing machinery which you use in your own plant or build for others, consider the advantages of using Air or Fluid Power the NOPAK way. For data and descriptions, see Sweet's File for Product Designers, or write for Bulletin SW-1.

GALLAND-HENNING MFG. CO., 2760 S. 31st St., Milwaukee 46, Wisconsin

Representatives in Principal Cities

NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

BREVITY—Identify by IEN - 4532 If you write the maker

Are there costly "leaks" in your weighing operations?

The fact that your present scales are simply accurate is not enough today. Ask yourself these questions (1) do they fit your operation (2) are they geared to other equipment as to speed and adaptability (3) do they require more labor to use than they should (4) do you have weighing duplication. Searching appraisal of these questions can stop costly "leaks" for you, in such tasks as testing by weight, counting operations, volume packaging as well as hundreds of other industrial weighing jobs. EXACT WEIGHT Scales, strictly for industrial use, stop these costly leaks because they are built for a particular industry. Further they are fitted to individual operations of the industry using them, as to speed of operation, production line layout and capacity. All of this saves time, money, product and manpower. Write for details to fit your needs.

EXACT WEIGHT SCALE Model No. 273 for counting, testing, production line check-weighing. Features end-lower construction, speed of operation—Capacity 12 lbs.

EXACT WEIGHT SCALES
Industrial Precision
THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 4533 If you write the maker

The World's Most Efficient
CONCRETE DRILL

29 Std. Sizes — Wide Variety in Drill Shanks

TILDEN ROTARY CONCRETE KORE DRILLS

Revolutionary Tilden Drills available in 29 standard sizes, from 3/16" to 4". Larger sizes to 8" in diameter and lengths up to 36" made to special order. A variety of shank lengths and fittings make these drills versatile and efficient.

TOP PERFORMANCE: 200 inches of concrete drilled before resharpening—drills glass, flat steel and rock in concrete—drills up to 6 inches per minute—makes straight clean holes—uses ordinary electric drills for fast, quiet cutting action.

U. S. Pat. No. 2506474

Write now for illustrated catalog on Konkrete Kore Drills — the world's most efficient.

Tilden Tool MANUFACTURING COMPANY
Branch Offices: 209 LOS MOLINOS • SAN CLEMENTE, CALIF.
1995 N. Fair Oaks, Pasadena 3, Calif. • 144 W. Washington Blvd., Chicago 7, Ill.

BREVITY—Identify by IEN - 4534 If you write the maker

are RUGGED!

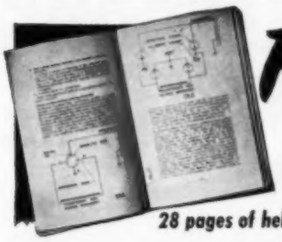
Just as Viking means rugged warriors, so does Viking stand for rotary pumps that are rugged. Designed and built for service, Viking pumps have proved dependable and long-wearing.

Note the simple "gear-within-a-gear" construction, with only two rugged moving parts and no small, intricate pieces to wear and get out of adjustment. You'll then know why Vikings are so famous for long, dependable service.

For information on Viking Pumps, write today for free Bulletin 515F.

Viking PUMP COMPANY
Cedar Falls Iowa

BREVITY—Identify by IEN - 4535 If you write the maker



Free!

FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET—Prepared by Western Precipitation Corporation, *pioneers in the commercial application of* COTTRELL *Precipitators*—summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell construction, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C103 today!

WESTERN Precipitation CORPORATION

DESIGNERS, ENGINEERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & VAPORS

Main Offices: 1951 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 4536 If you write the maker

Elasticone Guide Pin Covers

"Automatic Protection for Man & Machine"

- Interchangeable
- Long Life
- Will not bend or dent
- Neat appearance
- Stock sizes
- Self Aligning
- Fits front or back pins
- Automatic height adjustment

JUST SNAP INTO PLACE

• No tools required • No installation cost • No maintenance cost • No holes to drill • No threads to tap • No moving parts

WHEN ORDERING PLEASE SPECIFY O.D. OF BUSHING AND FULL OPEN HEIGHT OF SET

Protects Pins and Bushings from Dirt and Scale
Prevents Injuries to Die Setters and Operators

Protects Pins from Misplaced Works, Nicks or Scratches

CENTRAL SAFETY EQUIPMENT CO.
2204 E. Huntingdon Street Philadelphia 25, Pa.

BREVITY—Identify by IEN - 4537 If you write the maker

Fill up cracks, ruts, shallow holes, uneven spots, etc., in concrete floors with Smooth-On No. 7B Quick Floor Patch Cement. The patch will harden quickly, adhere strongly to an old floor, and is ready for use as soon as it is hard.

Anyone can apply Smooth-On No. 7B by following the simple directions that come with it. The patches will stay tight, because Smooth-On No. 7B expands slightly as it hardens and wedges the patch securely in place.

Order Smooth-On No. 7B Quick Floor Patch Cement in 1-, 5-, 20- or 100-lb. size.

FREE FLOOR PATCH FOLDER AND METAL REPAIR HANDBOOK

Folder gives full information on Smooth-On No. 7B Quick Floor Patch Cement. With it we'll send you the famous 40-page Smooth-On Repair Handbook, full of time-saving, money-saving repairs on plant and home equipment. Send now.

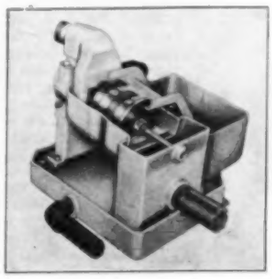
SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

Do it with **SMOOTH-ON**
QUICK FLOOR PATCH CEMENT

BREVITY—Identify by IEN - 4538 If you write the maker

SEPARATING . . Magnetic unit cleans grinding and machining coolant

Source: HONAN-CRANE CORP.
510 Indianapolis Ave., Lebanon, Ind.



Permanent magnet element, cylindrical in shape, is shaft mounted for slow rotation in a centrally located trough by a ½-hp. 110-volt 60-cycle ac. motor in this new separator. The cylinder attracts ferrous particles entrained in coolant returning from a machine. The ferrous particles carry non-magnetic particles with them as they accumulate on the cylinder. This accumulation is carried upward to be removed by a non-magnetic scraper into a "solids" tank to the right of the trough.

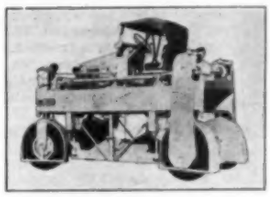
Coolant from which the solids have been removed flows to the end of the trough where it discharges into a chamber for return to the machine sump. Fluid rating is 20 gpm. and if this is exceeded the excess will overflow into the base of the machine for return to the sump without mixing into the cleaned fluid.

Magnetic Clarifier is the designation. Overall dimensions are about 22⅝ by 15¼ by 16½ inhes. Weight is 145 pounds. The unit can be installed in connection with a circulating pump or arranged to take discharge from the machine for gravity return to the sump. Tests indicate ability to remove about 98 per cent of the contaminants from liquid coolant.

BREVITY—Identify by IEN - 4539 If you write the maker

TRUCK . . Engine driven straddle unit rates 30,000 lb., travels to 30 mph.

Source: HYSTER CO.
2916 N. E. Clackamas St., Portland 8, Oregon



Model MHS designates new design of the company's previously developed Model-MH straddle truck, particularly for use in handling steel. Critical points of design have been strengthened for heavy-duty service. A new mechanism provides for rigid locking to hold in load-carrying position. The frame is designed to withstand shock that may be expected from steel billets and bars piled on bolsters.

The truck measures 191 in. in overall length by 79 to 100 in. in width and 130 to 142 in. in height, including overhead protection for the operator. Inside width for load carrying is 45 to 68 in. and inside height is 67 to 79 inches. Drive and power source for the load lifting equipment is a 6-cylinder engine rating 100 brake hp. at 3,000 rpm. Drive includes a transmission providing 5 selective speeds forward and also in reverse.

Bulletin, "Hyster Straddle Trucks for Mills, Docks, Warehouses, Industrial Plants," 16 pages, presents details.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4540 If you write the maker

PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •

Sabotage is a danger which calls for vigilance day and night. Property line vigilance is the job for Page Chain Link Fence, now as it has been for more than 60 years. Consult the nearby, long-experienced Page Fence engineering and erecting firm, which will submit cost estimates without obligation. Name and address will be sent with illustrated fence data on request.

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 4541 If you write the maker

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

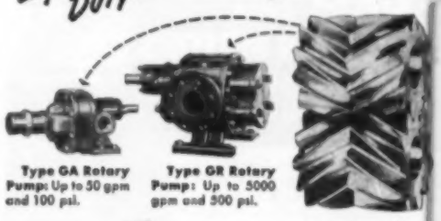
Two-sizes—tapered or straight sides.

IMMEDIATE DELIVERY
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa
Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 4542 If you write the maker

Light Duty or Heavy Duty



Type GA Rotary Pump: Up to 50 gpm and 100 psi.

Type GR Rotary Pump: Up to 5000 gpm and 500 psi.

Double Helical Herringbone Gear Rotors: Quiet and efficient; extra large wearing surfaces; no axial thrust; no trapping of liquid.

. . . The Same Sturdy Construction!

Both the light duty Type GA and the heavy duty Type GR incorporate the rugged herringbone rotors that operate so quietly and efficiently...combining with the whole advanced Worthington design for smoothest performance and longest, most economical rotary pump service. For further facts proving *there's more worth in Worthington,* write to *Worthington Pump and Machinery Corporation, Pump and Compressor Merchandising Division, Harrison, New Jersey.*

WORTHINGTON

P-D-3

BREVITY—Identify by IEN - 4543 If you write the maker

Conserve that Stainless!

If you possess any stainless steel of doubtful parentage, now is the time to identify it. Most stainless alloying elements are scarce—some have reached the critical stage.

Any mixed supplies of stainless steels you have in stock have become precious, and well worth sorting out.

To help you, Frasse engineering service has recently revised and reissued our Data Chart, Sec. A No. 3—which describes 16 simple methods for separating stainless from carbon and alloy steels, nickel stainless from moly grades, straight chrome from chrome nickel grades, etc. A detailed explanation of each testing method is also included.

The chart is printed on durable cardboard stock, regular file card size, and can be filed, tacked on a wall, or slipped under glass for speedy reference. Send the IENquiry for your free copy today.

for Stainless Steels *Call FRASSE 1st*

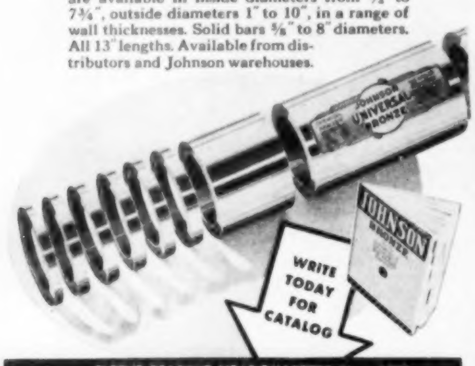
Bars • Sheets • Strip • Plates • Angles • Wire • Tubing • Pipe • Fittings

Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N. Y.
Jersey City • Philadelphia • Buffalo • Syracuse

BREVITY—Identify by IEN - 4544 if you write the maker

Insist on JOHNSON UNIVERSAL BRONZE

These bars are highest quality bearing bronze alloy, completely machined outside diameter, inside diameter and ends. No waste—no defects. You will find many uses for Johnson Universal Bronze Bars—bushings, bearings, thrust plates, washers, etc. Cored bars are available in inside diameters from ½" to 7¾", outside diameters 1" to 10", in a range of wall thicknesses. Solid bars ⅜" to 8" diameters. All 13" lengths. Available from distributors and Johnson warehouses.



SLEEVE BEARING HEADQUARTERS Since 1901
Johnson Bronze
476 SOUTH MILL STREET • NEW CASTLE, PA.

BREVITY—Identify by IEN - 4547 if you write the maker

WOOD WORKING . . Radial machine for sawing, shaping, routing, dadoing

Source: SKILSAW INC.
5039 Elston Ave., Chicago 30, Ill.

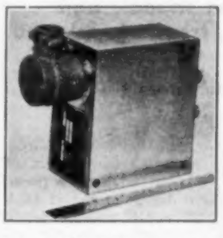
Model 450 is a new machine in the company's line of radial-arm circular saws. It takes a 2-hp. motor and a 14-in. blade or a 3 or 5-hp. motor with a 16-in. blade to provide cut-off capacities of 3$\frac{3}{16}$ in. and 3⅝ in. respectively. In both cases the width of cut with the blade set square is 16½ inches. Depth can be increased to 4½ in. by placing a ½-in. strip in front of the fence. The assembly includes a welded steel table with a wood top, a combination blade, a wrench and a kick-back preventer for ripping operations.

Construction is featured by the fact that controls are brought out to the front where an operator can set and reset the blade and can handle the work without having to move from one position. Set-screw adjustment at the column permits realignment of the radial arm after a considerable period of use. The machine occupies a floor space measuring 4½ by 6 feet. It weighs 475 pounds.

BREVITY—Identify by IEN - 4548 if you write the maker

GAGE . . Differential pressure cell in two ranges to 10 and 20 lb. per sq. in.

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



Matched bellows made of Monel Metal is assembled to apply opposing force on a cantilever beam to which the company's SR-4 strain gages are bonded in this new Type-FMB differential pressure cell. The testing element is hermetically sealed in an aluminum box. Electrical connections are made through glass-to-metal seals. The cell is not sensitive to linear acceleration in any direction and can be mounted in desired position.

Two pressure ranges of plus or minus 10 and plus or minus 20 lb. per sq. in. are available with corresponding maximum line pressures at 50 and 100 pounds. Application is in a standard 120-ohm or a 300-ohm circuit with recommended input at 6 and 12 volts respectively to maximum of 8 and 16 volts. Output at rated differential pressure is to plus or minus .005 millivolt per volt input. Calibration accuracy is within ¼ per cent of full scale. Each cell is temperature compensated for zero and span. Application is in connection with standard indicating, recording and control instruments.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Try the finding procedure given in the index, page 110

BREVITY—Identify by IEN - 4550 if you write the maker

ARMSTRONG Carbide TOOL HOLDERS

FOR HIGHER SPEEDS, AND HEAVIER FEEDS

ARMSTRONG Carbide Tool Holders and ARMIDE (Carbide Tipped) Cutters come in cased sets for tool rooms and maintenance departments, and individually in all sizes for general machine shop and production turning. They permit not only the ready machining of sand-filled castings, the hardest and toughest steels as well as many heretofore "unmachinable" materials, but also make practical much heavier cuts and cutting speeds up to 600 f.p.m. on ordinary work. They also run from 10 to 100 times as long between regrindings.

WRITE FOR CATALOG

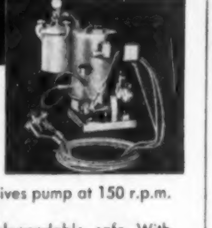
ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. ARMSTRONG AVENUE, CHICAGO 30, U. S. A.
NEW YORK SAN FRANCISCO

BREVITY—Identify by IEN - 4545 if you write the maker

SEE HOW GAST explosion-proof rotary AIR MOTORS helped solve this problem!

SEE OUR CATALOG in SWEET'S FILE

Gast Application Ideas Booklet—showing 26 design problems solved — sent upon request.



PROBLEM: Specify a motor to drive liquid pump at variable speeds, for Bede Circulating Paint Heater. (A unit for faster, uniform hot finish application.)
SOLUTION: A Gast Rotary Air Motor, running below 500 r.p.m., drives pump at 150 r.p.m. Uses less than 30 p.s.i. air pressure.
RESULT: Power that's economical, dependable, safe. With explosion-proof Gast Motors, entire unit was approved by Underwriters' Laboratories.

Your problem may be entirely different — yet the *unique* advantages of Gast Rotaries may offer just what your product requires. In sizes from 1/20 to 3 h.p., Gast Air Motors are amazingly compact and light in weight. And overloads can't burn them out!

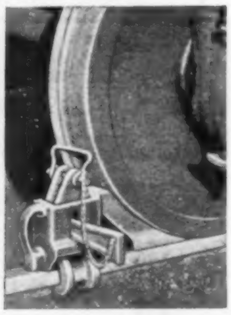
Write Gast, describing your original equipment application. We'll send full details. "Air may be your Answer!"

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
GAST MANUFACTURING CORP., 110 Hinkley St., Benton Harbor, Mich.

BREVITY—Identify by IEN - 4551 if you write the maker

HOLD heaviest CARS FAST



with M & M RAIL CLAMP

STOPS DANGER OF COSTLY DERAILMENTS

Strong in construction, simple to use, the M & M Rail Clamp holds all cars in immovable position. Body is electric furnace steel casting; lugs and wedges are highest grade drop forgings. Saves time in moving up—no blocks, ties or shims necessary.

Give your employees the extra protection of the M & M Rail Clamp and reduce costly accidents. Order today—available in two sizes to fit any rail worn or new—Model A--40 to 100 lb. rails; Model F--110 to 175 lb. rail.

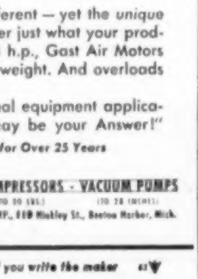
IMMEDIATE DELIVERY

SAFETY FIRST SUPPLY COMPANY
423 Magee Street, Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 4546 if you write the maker

AMERICAN PRESSED STEEL HAND TRUCKS

MOVE MATERIALS MORE EFFICIENTLY!



Here are some of the advantages American Hand Trucks offer . . . advantages you can *see!*

- FINGERTIP BALANCE —means easy handling.
- STEELITE® WHEELS —sealed-in ball bearings.
- SMOOTH IN-SET SURFACES —prevent load damage.
- TOUGH RED ENAMEL FINISH —weatherproofs surfaces.
- LIFETIME DESIGN —damaged parts replaceable.

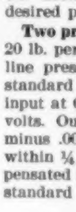
The American Pulley Company
4248 WISSAHICKON AVE., PHILADELPHIA 29, PA.

Please mail free American Hand Truck Bulletin to:
NAME ______ TITLE ______
COMPANY ______
ADDRESS ______
CITY ______ ( ), STATE ______

BREVITY—Identify by IEN - 4549 if you write the maker

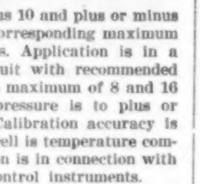
25 TYPES . . . OVER 150 SIZES!

CHELSEA FANS

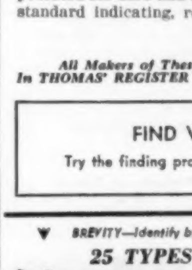


—for every industrial and commercial need!

There's a CHELSEA fan for every requirement — each type certified for performance in accordance with the Standard Code of the Propeller Fan Manufacturers Association.



Industrial Fan Type IND— For large general area ventilation. Moves large volumes of air under pressure. Sizes from 24" to 60".



All-Purpose Fan Type BB— For removing smoke, steam, heat, fumes, etc. Heavy duty direct drive fan for continuous operation. One piece panel and orifice, lightweight, simple to install. Sizes from 10" to 30".

Comfort Cooler EV— Designed for low headroom installations, this Chelsea package unit is complete. Quiet operation. Sizes 24" to 48".

Send for Your FREE KIT!

Contains all the information you need to make ventilating installations in factory, office, store or shop.
Write for yours today—address Department M.

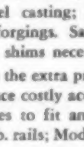
CHELSEA FAN & BLOWER CO. INCORPORATED
PLAINFIELD NEW JERSEY

BREVITY—Identify by IEN - 4552 if you write the maker

Only TYLER SPYRAL BANDSAW MACHINES give you all these features!

Speed up production, cut spoilage and reworks at lower initial cost!

- Models available to provide infinite speeds from 80 to 5000 FPM. No belts to change, no gears to shift. Change speeds by simply turning handcrank.
- Pivot point of upper band wheel located at top center of wheel insuring perfect blade alignment. Vernier screw provides hairline adjustment.



Upper band wheel pivots about point at top center of wheel. On all other bandsaws upper wheel pivot point is located near axis and in back of wheel, tends to throw top side of wheel in or out as shown in illustration.

- With Tyler Spyral blade and special roller guides, saw will cut in any direction without turning work. Simply move work in desired direction. Tyler bandsaws are provided with improved flat blade guides adjustable from any direction.
- Extra rigid 16½" x 17" box type, precision ground cast iron work table. Tilts 45 degrees right, 5 degrees left.
- 15" band saw with Spyral blade cuts to center of work piece 29½" in width, ANY LENGTH. With conventional flat blade cuts to center of work piece 29½" in diameter.
- Eye level indicator gives blade speed in feet-per-minute.

Backed by top quality material and workmanship, these features of unique design make a combination that will turn out better work for you, faster and easier!

Contact your supply house today. Ask about the Tyler bandsaw machine and the Tyler Spyral blade, the blade that saws in any direction. Saws most anything—rubber, plastic, tubing, steel, lead, balsa. Tyler Spyral blades fit most coping saws, fit any hacksaw frame with Tyler adapters. ILLUSTRATED FOLDER FREE ON REQUEST.

Tyler MANUFACTURING CO., INC., Inglewood, Calif.
Western sales: Tyler Spyral Saw Co., 1005 W. Arbor Vitae, Inglewood
Eastern sales: Marlie Trading, Inc., 60 Beaver St., New York 4, N. Y.

BREVITY—Identify by IEN - 4553 if you write the maker

Here's the right iron for EXTRA HEAVY DUTY SOLDERING

Super-powered at 700 WATTS!

The ideal Iron for heavy soldering and large branders. 700 watts with tip 1¾ inches in diameter. Heavy duty construction from tip to cord terminal. Rugged long-life heating element with case made from solid hexagonal steel for extra strength. Operates on any cycle AC or DC current; Furnished for either 110 or 220 volts.

HEXACON MODEL 700 $30.00

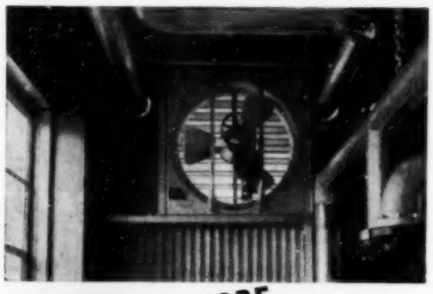
An Iron for Every Soldering and Branding Need

There is a quality made Hexacon-Iron for every use in manufacturing or repair work. Hexacon irons include screw tip, plug tip and hatchet types with tip diameters from ⅛" to 1¾"—from 40 to 700 watts. Write for illustrated catalog.

HEXACON

HEXACON ELECTRIC COMPANY
155 WEST CLAY AVE. • ROSELLE PARK, NEW JERSEY

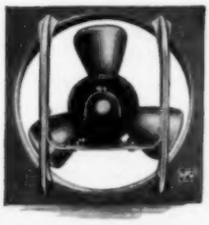
BREVITY—Identify by IEN - 4554 if you write the maker



"Buffalo" DISK FANS

MORE PRODUCTION through BETTER VENTILATION!

Comfortable workers are efficient workers! Ventilation by "Buffalo" Disk Fans is often the low-cost solution to your comfort problem. As the top photo shows, "Buffalo" Disk Fans are simple to install—and can be added to the plant inexpensively from time to time as the number of workers increases. "Buffalo" Disk Fans are of durable, rigid die-stamped construction, requiring a minimum of servicing. Blades are die formed to move air quietly and efficiently. WRITE FOR BULLETIN 3222-F for complete facts on the right fan for your ventilation job.



"BUFFALO" BREEZO FAN
Put it anywhere you need to exhaust stale air or fumes. 8" to 24" sizes.

"BUFFALO" BELT-AIR FAN
In 24" to 48" sizes, for delivering up to 19,000 cfm. Quiet, efficient.

"Buffalo" FIRST FOR FANS

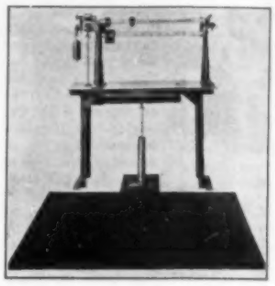
BUFFALO FORGE COMPANY
496 BROADWAY BUFFALO, NEW YORK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in All Principal Cities

VENTILATING	INDUCED DRAFT	HEATING
AIR WASHING	FORCED DRAFT	EXHAUSTING
AIR TEMPERING	COOLING	PRESSURE BLOWING

BREVITY—Identify by IEN - 4556 if you write the maker

WEIGHING . . Beam type scale, to 6,400 lb., platform to 76 by 54 in.

Source: YALE & TOWNE MFG. CO.
11002 Roosevelt Blvd., Philadelphia 15, Pa.



Load King is a new platform beam scale for general industrial use in service that involves shock loading. The lever mechanism in the platform is made of steel. There is no wood in the assembly. The scale mounts in a pit measuring 11 in. in depth. It is available in self-contained and semi-self-contained design. Platform sizes range from 46 by 38 in. to 76 by 54 inches. Poises on the main bar are mounted on roller bearings. Location of a load on the platform is not critical in accuracy of the readings.

BREVITY—Identify by IEN - 4557 if you write the maker

CORROSION PROOFING . . Coatings and paints for metal surface protection

Source: PITTSBURGH COKE & CHEMICAL CO.
1700 Grant Bldg., Pittsburgh 19, Pa.

Ask for booklet "Protective Coatings"

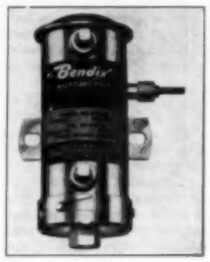
Coal-tar coatings for hot and cold application, alkyd, vinyl, phenolic-base and chlorinated-rubber paints are included in a new line of corrosive-proofing materials for metal surfaces.

The coal-tar materials are intended for pipe-line and tank-bottom coating. The paints have been developed for maintenance finishing and to resist attack by fumes, condensation, spillage and immersion in corrosive fluids, solvents.

BREVITY—Identify by IEN - 4558 if you write the maker

PUMP . . Solenoid plunger design for gasoline, fuel oil, to 30 gph.

Source: BENDIX AVIATION CORP.
Oakwood Ave. & 18th St., Elmira, N. Y.



Operation of this new fuel pump is by means of a solenoid and a hollow plunger with movement controlled by an interrupter in the electric circuit for smooth steady output at temperatures down to minus 70 deg. F. The solenoid takes a 7-watt input at maximum fuel delivery with operation on 6, 12 or 24-volt dc. The design is suited for fuel delivery for automotive or aircraft engines and to marine and diesel engines within its rated capacity of starting pressure to 7 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4559 if you write the maker

CLEVELAND TAPPERS

Cut Tapping Costs by Combining Operations

Cleveland engineers can save production dollars and valuable working time by designing a CLEVELAND TAPPER which will not only combine several operations but also tap groups of holes at one stroke of the machine.

Check with Cleveland FIRST

Only CLEVELAND offers you all these features.

- *Precision hardened and ground lead screw.*
- *Fully automatic or manual control.*
- *Precision depth control for blind hole tapping.*
- *Heat treated alloy steel spindles for maximum strength.*
- *Easily changed spindle speeds.*
- *Exclusive super sensitive clutch reduces breakage and increases tap life.*
- *Positive coolant and lubricant supply under constant control of operator.*
- *Rigidly constructed to give years of service.*
- *Maximum safety for operator and machine.*

A CLEVELAND TAPPER set up on a munitions job, tapping a 1 15/32", 16-pitch Buttress thread in SAE 4143 steel tubing hardened to 35 to 37 Rockwell.

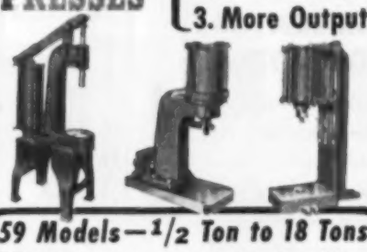
WRITE FOR PRODUCTION TAPPING GUIDE T-4

THE CLEVELAND TAPPING MACHINE CO.
A Subsidiary of AUTOMATIC STEEL PRODUCTS, INC., CANTON 6, OHIO

BREVITY—Identify by IEN - 4560 if you write the maker

HANNIFIN AIR PRESSES

1. Minimum Investment!
2. Less Effort!
3. More Output!



59 Models—1/2 Ton to 18 Tons

FOR fast, efficient, low cost production with a minimum investment in equipment, Hannifin Air Operated Presses can't be beat for countless pressing, broaching, molding, staking, marking, bending, punching, forming, oil grooving, riveting, keyway cutting, and assembly operations.

HIGH SPEED, EFFICIENT—Effortless speed through new instant-acting valves. Use ordinary shop air supply.

EVERY WORK CONVENIENCE—Finest Hannifin engineering and construction. *Send for descriptive bulletins.* HANNIFIN CORPORATION, 1107 So. Kilbourn Ave., Chicago 24, Illinois.

HANNIFIN
Air Operated Presses

BREVITY—Identify by IEN - 4561 if you write the maker

BE READY FOR *Every* CLEANING NEED

IDEAL BLO-R-VAC

Power-packed and with highest cleaning efficiency, IDEAL Blo-R-Vac speeds *all* your cleaning jobs! Low in first cost, it's actually *three rugged cleaners in one!* Vacuums lint, dirt, picks up water. Promotes scrap salvage — metal particles stay in big tank; lighter particles go into dust-tight bag. Power unit serves as a separate blower-sprayer or hand type cleaner. Full selection of attachments. 1⅓ or ⅓ H.P.

Triple Value!

- A "Tank-Type" Cleaner
- A "Hand-Type" Cleaner
- A Blower-Sprayer

All in One!

CONVERTS IN A JIFFY! . . . from a "tank-type" cleaner to a "hand-type" cleaner or blower.

Sold Through America's Leading Distributors
Canadian Distributor: Irving Smith, Ltd., Montreal

TRY IT FREE!

IDEAL INDUSTRIES, INC.
1108 Park Ave., Sycamore, Illinois
Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.

Name_____
Company_____
Address_____
City_____ Zone____ State____

BREVITY—Identify by IEN - 4562 if you write the maker

For Protective and Productive Lighting *Specify* PYLE-NATIONAL

WEATHER-TIGHT . . . DUST-TIGHT

ENCLOSED FLOODLIGHTS

Don't economize on the initial cost when planning a floodlight installation. It is the elimination of large maintenance, repair and replacement expense that counts.

Sealed against moisture and dirt, constructed throughout of rugged, corrosion-proof materials, Pyle-National floodlights retain their original high-efficiency output throughout an exceptionally long service life, with negligible maintenance and replacement expense.

Write for Floodlight catalog 2100.

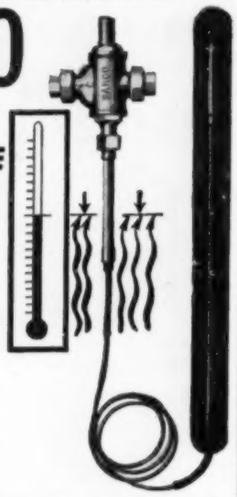
SINCE 1891

THE PYLE-NATIONAL COMPANY
1348 NORTH KOSTNER AVENUE CHICAGO 51, ILLINOIS
District Offices and Representatives in Principal Cities of the United States.
PLUGS AND RECEPTACLES • PYLET CONDUIT FITTINGS

BREVITY—Identify by IEN - 4563 If you write the maker

SARCO

ROOM TEMPERATURE REGULATORS



Self-operated, liquid expansion type control. No electricity or compressed air needed. Used for room temperatures, brine coils, dryers, ovens and ducts of all types. Temperatures 0° to 300°F. Cat. No. 600.

291

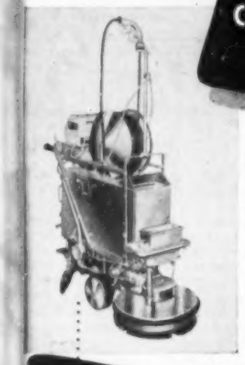
SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

BREVITY—Identify by IEN - 4564 If you write the maker

NEW Self-Propelled SCRUBBER-VAC.... .... CUTS CLEANING TIME 2/3!



For **Small-Area Factories (2,000 to 15,000 sq. ft. of floor)**

The *new 418P Finnell Scrubber-Vac* cleans floors in *approximately one-third the time* required with a conventional 15 or 18" scrubber-polisher. And the *new 418P* also handles the dry work—polishing, steel-wooling, etc. Has 18" brush ring. Vacuum performs *quietly*. The machine can be leased or purchased.

Applies cleanser, scrubs, rinses, and picks up in ONE operation!

FIND OUT WHAT YOU WOULD SAVE... with a *Finnell Scrubber-Vac*. *Finnell* makes several models and sizes. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2605 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Pioneers and Specialists in FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 4565 If you write the maker

ALL INFORMATION, METHODS, AND IDEAS NEEDED TO PRODUCE *BETTER TOOLS AND DIES*

Practical Data on Popular Analyses of Tool Steels, their Selection, Heat Treatment, and Use

in the Revised, Enlarged SIXTEENTH PRINTING of this

TOOL and DIE STEEL HANDBOOK

By Palmer and Luerssen

Here's the BOOK OF ANSWERS for every man responsible for tools and dies. Shows you how to increase your company's production from present equipment—how to reduce toolmaking trial and error, conserve tool steel, avoid die troubles, simplify heat treatment. Gives complete working information on everything from selection of the right steel to heat treating methods and equipment, hardness and toughness testing, latest data on high speed and hot work steels. 564 pages, 355 charts, photos, diagrams give you facts on: how design affects heat treatment, hardenability tests, time required to heat different tools to required hardening and drawing temperatures, furnace atmospheres, quenching, tempering, trouble-shooting.

PLUS 80-PAGE ALPHABETICAL SELECTOR SHOWING WHICH STEEL TO USE FOR ALMOST EVERY TOOL AND DIE. Use this book to train new men and upgrade skilled men.

OVER 100,000 COPIES IN USE! CLIP AND MAIL NOW

THE CARPENTER STEEL CO. • READING, PA. • DEPT. BX-2

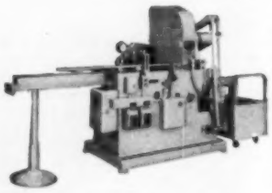
Please send me, postpaid, your revised "Tool Steel Simplified". I enclose $2.00 ($2.50 outside U.S.A.) in full payment of the book.

NAME_____ TITLE_____
FIRM NAME_____
MAILING ADDRESS_____
CITY_____ STATE_____
(Please print)

BREVITY—Identify by IEN - 4566 If you write the maker

CUTTING . . Abrasive disc machine, automatic, rates steel tube to 3½ in.

Source: AMERICAN CHAIN & CABLE CO.
927-31 Connecticut Ave., Bridgeport 2, Conn.



Work pieces to 12 in. in maximum length can be cut in the automatic sequence operation of this new No. 270 wet abrasive-cutting machine. Capacity in solid steel bar stock is to 2 in. in diameter, steel tube to 3½ inches. The stock is mounted on a carriage riding rectangular steel ways on roller-bearing rolls between two hardened stops. The carriage is reciprocated by a hydraulic cylinder and mounts a work bar clamp, also hydraulically operated.

The wheel spindle is driven by a 7½-hp. motor for operation at 1,800 rpm. It takes abrasive discs measuring 1/16 to ⅛ in. in thickness by 16 in. in diameter. A ½-hp. motor drives a hydraulic pump to supply pressure for the sequence movements. A ¼-hp. motor-driven pump provides a flow of coolant to the wheel and work, circulating this coolant from a caster-mounted tank located beside the machine.

With the disc in retracted position the operator starts the cycle to advance the bar stock, grip it hydraulically and simultaneously advance the disc to make the cut, release the carriage clamp and retract the carriage for the next forward movement. Upon cutting through the work the disc contacts a diamond plug causing a switch to operate and reverse a four-way valve. This retracts the disc to "up" position, releases the work clamps, ejects the work and again engages the clamp on the carriage to start a new cycle. The machine occupies 100 by 50 in. of floor space and stands 64 in. in height.

BREVITY—Identify by IEN - 4567 If you write the maker

TESTING . . Electronic instrument produces variable signals for test

Source: TRIPLETT ELECTRICAL INSTRUMENT CO.
11-15 Harmon Drive, Bluffton, Ohio

Model 3432 is a new test oscillator providing seven 330-deg. scales with five fundamental ranges between 165 kc. and 40 mc. In addition to two harmonic ranges calibrated at 36 to 120 mc. The range selector is a five-position follow-up coil switch. An rf. selector provides high and low rf. output. Fine control to a coaxial output-cable connector is made by an attenuator. A circuit selector is employed to internally modulate a signal that is variable between 0 and 100 per cent at 400 cycles.

Variable amplitude of external modulation is 40 to 15,000 cycles with the unmodulated signal or variable audio of 0 to 10 volts at 400 cycles. The rf. and audio circuits are shielded with copper-plated steel. Assembly is in a metal housing measuring about 15½ by 11 by 6 inches. Operation is on 110-volt 50/60-cycle ac. Weight is 14½ pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4568 If you write the maker

THE STORY BEHIND THIS PICTURE!

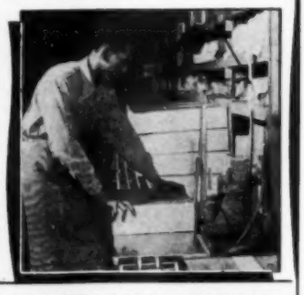
Shipping Room Supply Company, our Los Angeles distributor, writes about this recent installation:

"The story behind Globe Lighting is as follows:

They have manufacturing operations here and at Brooklyn, where they use International Retractable Anvil Staple Machine Model HFA (pneumatically operated portable job). We sold them this TH-S-HAS Model here after a short trial. They had heard of our equipment from their Brooklyn plant. They used tape before, but now by merely driving two staples at each end of their cartons they find that they have a neater, more secure closure — plus the fact that costly bottlenecks are avoided".

And so it goes throughout the nation — more and more plants are finding out that they too can save time, money and prestige by closing their cartons The International Way.

International Retractable Anvil Staple Machines staple filled corrugated or fibre cartons from the outside — tops and bottoms simultaneously, if desired!



INTERNATIONAL STAPLE AND MACHINE COMPANY
HERRIN 5, ILLINOIS
Distributors In Principal Cities

BREVITY—Identify by IEN - 4569 If you write the maker

Aerovent EXTENDED SHAFT FAN

KEEPS MOTOR OUT OF AIR STREAM

Extended shaft may be water jacketed, if desired. Sizes 12" to 84". 2, 4 or 6 Blades.

For industrial applications where it is desired to keep the motor out of the air stream to meet Underwriter's specifications for exhausting explosive vapors. It protects the motor from high temperature air, corrosive fumes, or combination of obnoxious fumes and moisture.

Certified Ratings PFMA

Other Models
Direct Connected, Man Cooling, Duct Type, Belt Driven, Pulley Driven. Sizes 12" to 144".

Write today for ENGINEERING BULLETIN

AEROVENT FAN CO., INC.
ASH and BROWN STREETS, PIQUA, OHIO
Competent Sales Engineers in Principal Cities

BREVITY—Identify by IEN - 4570 If you write the maker

PREFERRED BY INDUSTRY

HARGRAVE *Tested Tools*

SINCE 1879

"A CLAMP FOR EVERY PURPOSE"

CHISELS — BRACE WRENCHES
PUNCHES — MASONRY DRILLS
STAR DRILLS — WASHER CUTTERS

THE CINCINNATI TOOL COMPANY
1953 Waverly Avenue • Cincinnati 12, Ohio

There is an Industrial Distributor stock near you

BREVITY—Identify by IEN - 4571 If you write the maker

Faster Handling Lower Cost with HYTROL

FOLDING CONVEYOR

Portable — Low-Priced — Versatile

Handles boxes, bags, bales, bundles and cartons • Compact—folds to half its size • Can be taken into freight cars for unloading • Elevates to any angle while in use • Made in 5 sizes, 10' to 20' long • Widely used for between-floors handling jobs • Loading end near floor—saves lifting • All moving parts concealed to protect operator and products • Controls hydraulically operated • Flow of materials can be reversed by turn of a switch • Welded steel construction • Stacks bagged products four times as fast as manual method • GUARANTEED against faulty materials and workmanship. For complete information and prices, write Seedburo Equipment Company, 7014 Converse Bldg., Chicago 6, Illinois.

SEEDBURO CHICAGO

Exclusive Distributors for Hytrol Conveyors

BREVITY—Identify by IEN - 4572 if you write the maker

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants.

How it works to—

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Complete control of your tools will save head-aches in the months ahead.

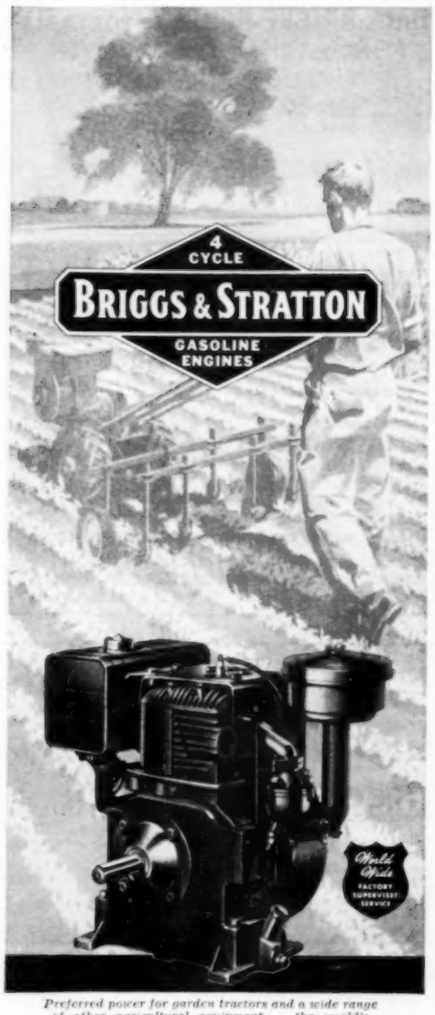
Write for your copy today to:

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS

PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by IEN - 4573 if you write the maker



Preferred power for garden tractors and a wide range of other agricultural equipment — the world's most widely used single-cylinder gasoline engines on machines and tools for industry, construction, railroads, oil fields, etc., and on appliances and equipment for farm and home.

"PREFERRED POWER" for home, farm, and industrial equipment—powered by gasoline engines. Briggs & Stratton Corporation, Milwaukee 1, U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

BREVITY—Identify by IEN - 4575 if you write the maker

DUST COLLECTING . . Cyclone unit combined with filter rates 2,405 cfm.

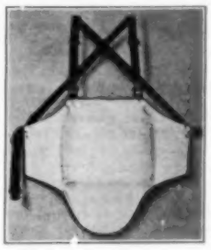
Source: AGET-DETROIT CO.
401 Main St., Ann Arbor, Mich.

Dust laden air is cleaned by the combined action of a cyclone separator and glass-fibre filter in this new Dustkop Model 20B30 unit so the air can be exhausted back to the room in which the unit is located. It has sufficient capacity to serve six 16-in. grinding wheels or three 24-in. buffing and polishing wheels by connection to its 7-in inlet. The assembly measures 22 by 44 by 108 inches. The inlet connection is at a distance of 75 in. from the floor line.

BREVITY—Identify by IEN - 4576 if you write the maker

PROTECTING . . Padded apron guards worker against kick-back

Source: INDUSTRIAL PRODUCTS CO.
2801 N. Fourth St., Philadelphia 33, Pa.

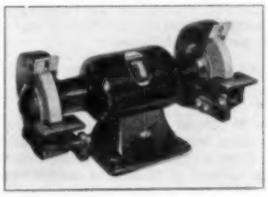


Fibre shield is bound and strapped in convex position inside a covering of heavy white canvas in this new kick-back apron. Hair-felt padding is included in the assembly. The apron is supported on a worker's shoulders by straps, is similarly secured around his waist. It is particularly intended for workers at sawing operations.

BREVITY—Identify by IEN - 4577 if you write the maker

GRINDING . . Bench type machines, ball bearing, three 6 in. and one 8 in.

Source: CUMMINS PORTABLE TOOLS DIVISION
4738-42 Ravenswood Ave., Chicago 40, Ill.



Four new machines are included in the company's line of bench-type grinders of which a representative unit is illustrated. Two mount 6-inch wheels, are driven by ¼-hp. motors, measure 11⅝ and 16 in. in length. One mounts 6-in. wheels, is driven by a ⅓-hp. motor and measures 16-in. in length. The fourth mounts 8-in. wheels, has a ¾-hp. motor and is 19 in. in length.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4578 if you write the maker

BREVITY—Identify by IEN - 4579 if you write the maker

MERCURY LIGHT-DUTY "TUG"

ELECTRIC TRACTOR

3 Wheel Model

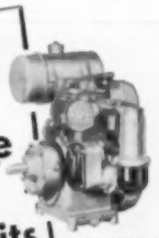
The ideal haulage unit where floor, elevator capacities or operating space are limited. Tractor is only 70" long and 34" wide. Develops a maximum draw bar pull of 1,000 lbs. — sufficient to move a trailing load of 25 tons on smooth surface. Complete description and specifications in Bulletin 180-1. Request your free copy.

MERCURY MANUFACTURING COMPANY, 4132 S. Halsted Street, Chicago 9, Ill.

BREVITY—Identify by IEN - 4580 if you write the maker

BREVITY—Identify by IEN - 4581 if you write the maker

Gain More Power Advantage for Your 3 to 6 h.p. Units



Models ABN and AKN 4-cycle Single Cylinder Wisconsin Air-Cooled Engines Power Range: 3 to 6 hp.

Presented here are a few of the basic facts why Wisconsin Heavy-Duty Air-Cooled engines offer important advantages to the designing engineer, equipment manufacturer and the ultimate user:

1. Rotary type high tension magneto, with impulse coupling, mounted on outside of engine . . . operates as an entirely independent unit that can be serviced or replaced in a few minutes.

2. Self-cleaning tapered roller bearings at both ends of the crankshaft . . . will withstand side-pull or end-thrust without danger to bearings.

3. Maximum torque at usable speeds . . . most desirable on equipment that really has to go to work.

Our Engineering Department will be glad to co-operate with you in adapting Wisconsin Engines to your requirements. Write for detailed data.

WISCONSIN MOTOR CORPORATION
World's Largest Builders of Heavy Duty Air-Cooled Engines
MILWAUKEE 46, WISCONSIN

BREVITY—Identify by IEN - 4582 If you write the maker

Nicholson W. O. Traps

STOP COSTLY LOSS

OF STEAM AND AIR

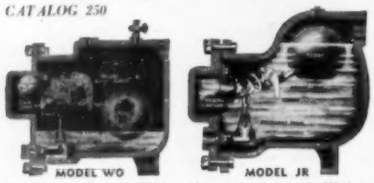
With cost of steam and compressed air steadily increasing, these 3 leak-proofing features of Nicholson weight-operated traps are proving important cost-cutters in many plants:

(1) No air-wasting vent, such as is in all inverted bucket traps.

(2) Positive water seal at valve. A Nicholson W.O. trap cannot lose prime and leak live steam.

(3) Large orifice keeps valve clean, preventing blow-through. Three types, for pressures to 1500 lbs. Working parts of stainless steel.

CATALOG 250



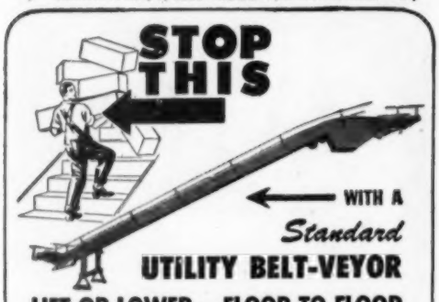
MODEL WO — for steam, air press. to 650 lbs.

MODEL JR — for steam, air press. to 200 lbs.

W. H. NICHOLSON & CO. 159 OREGON STREET WILKES-BARRE, PA.

Sales and Engineering Offices in 53 Principal Cities

BREVITY—Identify by IEN - 4583 If you write the maker



LIFT OR LOWER—FLOOR TO FLOOR OR CONVEY HORIZONTALLY

Move boxes — cartons — crates — sacks and bundles from basement to first floor, or any floor to floor, or convey in a straight line — continuously with the Standard UTILITY BELT-VEYOR. A compact, pre-engineered unit, easy to install (over existing stairways where practical) handles commodities up to 150 lbs. — available in 4 belt widths — 10, 14, 20 and 24 inch — and equipped with adjustable guard rails to facilitate handling packages wider than belt. Electric motor operated. Write for Bulletin IEN-51.

Standard Conveyor Company
North St. Paul
Minnesota

Sales and Service in Principal Cities

Standard GRAVITY & POWER CONVEYORS

BREVITY—Identify by IEN - 4584 If you write the maker

WHEN MEN GO "CRAZY WITH THE HEAT"

"HY-V" AIR JETS CAN'T BE BEAT

TO REDUCE FATIGUE AND KEEP 'EM ON THEIR FEET!

BLOW COOL AIR TO HOT SPOTS without ducts!

"Hy-V" Air Jets project a concentrated stream of fresh air as far as 35 feet. Built in two models—with bracket for wall mounting or with portable wheeled stand. Capacities up to 12,000 cubic feet of air per minute. Send for *free bulletin.*

HY-V AIR JETS

DeBOTHEZAT FANS DIVISION

American Machine and Metals, Inc.
East Moline, Illinois

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, side films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 4585 If you write the maker

AIR CONDITIONING . . New house publication deals with dehumidifying equipment and applications

Surface Combustion Corp.
2373-77 Dorr St., Toledo 1, Ohio

"The Humidity Engineer" titles new house publication to be issued at intervals. It presents information on the company's Kathabar air dehumidifying equipment for comfort and process use. Your name will be added to the mailing list.

BREVITY—Identify by IEN - 4586 If you write the maker

ALUMINUM . . Fastening methods for aluminum by rivets, bolts, screws

Reynolds Metals Co.
2502 S. 3rd St., Louisville 1, Ky.

Excellent review of available fasteners is contained in new 136-page booklet, "Mechanical Fastening Methods for Aluminum", available only upon letterhead request. The booklet describes types of mechanical joints and fasteners with emphasis on their use in aluminum fabrication. Included are standard and special rivets, screws, nails, pins, staples, formed joints, resin bonding. Line drawings and application pictures provide a summary of fasteners by type, major features, operating principle. Please write direct to the company. Reader Service requests will not be honored.

BREVITY—Identify by IEN - 4587 If you write the maker

BELTS . . How to conserve them described by manual, wall chart, bulletins

Quaker Rubber Corp.
Tacony & Comly Sts., Philadelphia 24, Pa.

New kit of information is offered by the company on request to help conserve rubber conveyor belts, transmission belts, hose and packing. Title is "Conservation Maintenance Plan". Basis is a 16-page manual of illustrated suggestions on how to select, install and maintain these rubber products.

A wall chart on heavy paper, 17 by 22 inches, condenses the bulletin information into selection tips, installation suggestions, maintenance do's and don'ts. Monthly bulletins will follow to supplement the original information.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4588 If you write the maker

Preferred for All General Overhead Work

Ezebilt MAINTENANCE SCAFFOLDING

For simpler, more economical scaffolding specify Universal "Ezebilt"—"Up Faster, No Bolts to Master." The basic scaffold parts, with casters, can form a rolling maintenance tower with elevated platform work level, passageway and work clearance. Send for catalog of simple erection.

RENT OR BUY

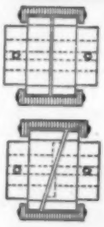
Distributors throughout the country offer fast help and service from basic stocks—Sale or Rental.

UNIVERSAL MANUFACTURING CORP.
800 NORTH ST., ZELIENOPLE, PA.

BREVITY—Identify by IEN - 4589 If you write the maker

TWO TYPES FOR LIGHT AND HEAVY DUTY

RAMSEY FLEXIBLE COUPLING



STRAIGHT TYPE

For light loads to 300 HP capacity in eleven sizes from ½" bore. Simple, compact design with steel pinions cut straight and chain acting as flexing member. Easily installed, aligned and disconnected.

DIAGONAL TYPE

For loads up to 600 HP in speed ranges to 3600 R.P.M. in ten sizes from ½" bore. Rugged design and construction features steel pinions cut diagonally to allow use of full width of chain under tension.

Write Today for "THE COUPLING BULLETIN"

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 4590 If you write the maker

THIS GRIEVE-HENDRY PORTABLE INDUSTRIAL ELECTRIC OVEN WILL CUT YOUR COSTS!

10 CU. FT. CAPACITY
30" Wide
25" Deep
24" High
Removable Shelves and Drip Pan

FOR THESE REASONS . . .

. . . LOW FIRST COST ONLY . . . $79.50

- PORTABLE — move it to the job, or use in a group or bank.
- LOW OPERATING COST — costs less than 5c per hour to operate.
- OUTSIDE READING SENSITIVE THERMOMETER AVAILABLE.
- ADJUSTABLE TEMPERATURE CONTROL.
- FAN DRIVEN FORCED CIRCULATION — assures uniform temperature.
- PLUGS INTO ANY 110V WALL OUTLET — no special wiring required.

Specials designed and built to requirements — other standard models available. Write for Literature.

GRIEVE-HENDRY CO., INC.
1654 WEST HADDON STREET CHICAGO 22, ILLINOIS

BREVITY—Identify by IEN - 4591 If you write the maker

WHEN YOUR FLOORS ARE MAINTAINED WITH FAMOUS HILLYARD CARE

Specialized Hillyard products create no fire, explosion or slipping hazards...are the most labor-saving available for every type of floor, and safe maintenance of valuable machinery.

Every Hillyard treatment for industrial use is Approved "Anti-slip" by Underwriters' Laboratories.

FREE SURVEY OF YOUR FLOORS...

There's a Hillyard Maintaineer near you to make a survey of your floor needs—schedule a work-saving program of plant cleaning. Mail coupon Today.

HANDLE WITH HILLYARD CARE

Hillyard Chemical Company, Dept. D 1-5
St. Joseph, Missouri

Please send me free information on "How to Cut Spring Cleaning Costs in Half."

Name _____ Title _____
Institution _____
Address _____
City _____ State _____

On your Staff not your payroll

BRANCHES AND WAREHOUSE STOCKS IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 4592 if you write the maker

ADEL ... HEADQUARTERS
FOR INDUSTRIAL HYDRAULIC EQUIPMENT

This is the main plant of the ADEL DIVISION OF GENERAL METALS CORPORATION. A permanent, firmly established organization, backed by highly skilled personnel and extensive facilities for the highly specialized operations in the manufacture of industrial hydraulic equipment.

This plant provides 150,000 square feet of floor space and can supply you with all the elements necessary to build complete hydraulic systems meeting the most exacting requirements.

A complete line of industrial hydraulic equipment for every application.

A few select territories are still available to progressive distributors of hydraulic equipment. Inquiries invited.

ADEL *Write for descriptive literature.* DIVISION OF GENERAL METALS CORPORATION 10763 VAN OWEN STREET • BURBANK, CALIFORNIA

DISTRIBUTORS: AIR & HYDRAULIC ENGINEERING CO., NEW HAVEN, CONN. • RUSS CHAMBERLIN COMPANY, PORTLAND, OREGON • J. BOYD COATES, PHILADELPHIA, PA. • FRANK T. DONNELLY COMPANY, PITTSBURGH, PA. • MASKEL ENGINEERING & SUPPLY CO., SAN FRANCISCO, CALIF. • MASKEL ENGINEERING & SUPPLY CO., GLENDALE, CALIF. • HYDRAULIC BRAKE SUPPLY CO., PHOENIX, ARIZ. • LINCOLN SUPPLY CO., PROVIDENCE, R. I. • SCOTT EQUIPMENT AND ENGINEERING COMPANY, DAYTON, OHIO • H. F. SODERLING CO., SEATTLE, WASH. • ROBERT TAYLOR & SONS, SALT LAKE CITY, UTAH • WYATT SALES COMPANY, CLEVELAND, OHIO • CORBY SUPPLY COMPANY, ST. LOUIS, MO. • INDUSTRIAL AIR & HYDRAULIC EQUIPMENT CO., DETROIT, MICH. • HYDRAQUIP CORPORATION, HOUSTON, TEX.

BREVITY—Identify by IEN - 4593 if you write the maker

MORE SOLD THAN ANY OTHERS
Write for Catalog
OF USES
AND SPECIFICATIONS

GENERAL
Industrial Pneumatic Tires

..SAVE TIME·LABOR·MONEY

Protect equipment and floors • Reduce Breakage

- ★ *Wide Base Wheel*
- ★ *More Air Volume*
- ★ *More Stability*
- ★ *More Load Capacity*
- ★ *Longer Miles in Hi-Speed Service*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low and high speeds.

Rigid CASTER FORKS *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

Send for Catalog • Dept. 3

THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

NEWS NOTES—Continued

"Passenger conveyor to replace subway"

BREVITY—Identify by IEN - 4595 if you write the maker

CONTROLS . . Sound color film on principles of automatic process control

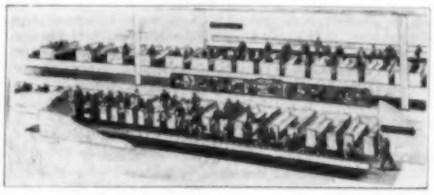
Instrument Society of America
919-23 Ridge Ave., Pittsburgh 12, Pa.

Available for showing or purchase, new "Principles of Automatic Control" is a 16-mm. color sound motion picture with running time of 55 minutes. It employs a demonstration method to show principles, selection and use of process control instruments. Showing fee is $10. Ask for folder.

BREVITY—Identify by IEN - 4596 if you write the maker

CONVEYING . . Proposed belt assembly to carry passengers in small cars at 15 mph.

Goodyear Tire & Rubber Co.
1142-46 E. Market St., Akron 16, Ohio



Low-speed loading and unloading is combined with higher-speed travel in a new proposed belt conveyor assembly intended to replace the subway shuttle under Times Square in New York. The design was engineered by the company in cooperation with Stephens-Adamson Mfg. Co. to handle a peak load of 32,000 passengers per hour in each direction.

A passenger steps on to a 6-ft. loading platform which actually is a belt moving at 1½ mph. He steps from it into one of several small cars that seat 10 people on a parallel belt at the same speed. Twenty-five cars pass the platform per minute. Once clear of the platform, the car is accelerated by a bank of pneumatic-tire wheels and deposited on a long belt that travels at 15 mph. between stations. Procedure is reversed at the other end and the passenger walks off the receiving platform to his destination. His car passes around a large wheel to direct it back along the loading platform.

Individual cars in the proposed design would be lightweight rectangular units to occupy the width of the belt. Each would have a row of seats down each side and a short aisle in the center. Top and one end would be of transparent plastic. Doors in the other end would open automatically for loading and discharge when in proper position with passenger platforms.

BREVITY—Identify by IEN - 4597 if you write the maker

CORROSION PROOFING . . Application instructions in bulletin on the company's Bitumastic materials

Koppers Co.
2047 Koppers Bldg., Pittsburgh 19, Pa.

"Application Manual", 12 pages, describes how to prepare surfaces, how to condition the six corrosion-proofing materials in the company's Bitumastic line, and how to apply each of the materials by brush or spray. It includes notes on care and cleaning of spraying equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4599 if you write the maker

"The FRICK Unit Air Conditioner Saved Our Candies"

Says Hupper's Confectionery at Lancaster, Penna.

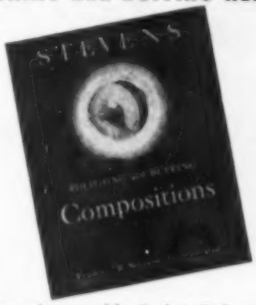
Here a 5-hp. Frick unit cools a room measuring 53 to 23 feet, protecting a large display of chocolates, and keeping customers comfortable. Installation by Marr Engineering Co., Frick Distributors at Reading, Penna.

There's a Frick Air Conditioning System to suit the exact needs of every business. Unit conditioners are furnished in 5- and 7½-hp. sizes: are excellent for offices, shops, inspection rooms and process departments.

FRICK CO. *Also Builders of Power Farming and Sawmill Machinery*

BREVITY—Identify by IEN - 4600 if you write the maker

FREE — A GUIDE TO BETTER POLISHING and BUFFING RESULTS



This new catalog, issued by Frederic B. Stevens, Inc., is now available to metal finishers. It is a 12-page booklet and describes the many Stevens job-tested compositions for buffing and polishing. In addition the catalog outlines Stevens' customer services which include operation of a pilot plant for analyzing buffing and polishing operating problems. The catalog also includes charts showing the recommended type of composition for all surfaces and every operation. Copies of the Stevens composition catalog may be obtained from Stevens or Udylite representatives or by writing direct to Frederic B. Stevens, Inc., Detroit 16, Michigan.

BREVITY—Identify by IEN - 4601 if you write the maker

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

BREVITY—Identify by IEN - 4602 if you write the maker

GET THE FACTS NOW ON THIS REVOLUTIONARY NON-SLIP FLOOR PLATE

A. W. ALGRIP Eliminates Costly Slipping Accidents

- A. W. ALGRIP is the one and only Abrasive Rolled Steel Floor Plate in the World.
- Wet or dry it prevents slipping!
- Even on steep inclines A. W. ALGRIP won't let you slip.
- A. W. ALGRIP has over 1001 plant and product applications.
- Easy to install, A. W. ALGRIP never requires maintenance.

THERE IS NEVER A SLIP—ON A. W. ALGRIP

Free 8-Page Booklet giving all the important data you need on A. W. ALGRIP. Write for booklet B-3.

A. W. ALGRIP
ABRASIVE ROLLED STEEL FLOOR PLATE

Product of ALAN WOOD STEEL COMPANY
Conshohocken, Penna.
125 Years of Iron and Steel Making Experience

Send me a copy of your 8-page A. W. ALGRIP Booklet B-3

Name_____
Title_____ Company_____
Address_____
City_____ Zone_____ State_____

Other Products: PERMACLAD Stainless Clad Steel • A. W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloys and Special Grades)

BREVITY—Identify by IEN - 4603 if you write the maker

Carter

CUTS COSTS WAY DOWN!

CARTER GUIDE LINE LIGHTS

Carter Guide Line Lights throw a straight, black shadow-line across the work. Your guiding light to quick, accurate straight line sawing. Applicable whenever a guide line is needed.

Write—

For free illustrated folders

Carter Guide Line Lights are used for straight line sawing in leading plants of all kinds everywhere.

CARTER PRODUCTS COMPANY INC.

57 MOUNT VERNON, N. W. • GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 4604 if you write the maker

THE DIRTIER THE BETTER for LAN-O-KLEEN!

DIRT that's really hard to remove . . . that's deeply imbedded in workers' hands . . . that irritates cuts and abrasions—directly affects production figures! Think of the materials your present cleaner won't remove: graphite and metallic dust . . . heavy grime and lubricants . . . even common soil and office dust—no matter how hard you scrub!

LAN-O-KLEEN, the industrial soap powder, is designed for "heavy-duty" dirt removal. A fine corn meal base sponges out the pores . . . while thick suds sweep away surface dirt. As water is added, soothing Lanolin spreads over the skin, leaving hands fresh-feeling and clean as a whistle. Its soothing emollient action won't aggravate cuts and bruises. Further, Lan-O-Kleen and the sturdy Lan-O-Kleen dispenser are a dollar-saving combination—as a West representative can easily demonstrate.

LAN-O-KLEEN the industrial hand cleaner containing LANOLIN

WEST DISINFECTING Company

WEST DISINFECTING COMPANY
42-16 West Street, Long Island City 1, N. Y.

Gentlemen:

☐ Please send a sample carton of Lan-O-Kleen.

☐ Please have your local West representative come out and give me a demonstration.

Name ..... Title .....

Company .....

Address .....

City ..... Zone ..... State .....

48

NEWS NOTES—Continued

"Book of selected manufacturing methods"

BREVITY—Identify by IEN - 4606 if you write the maker

DEFENSE PRODUCTION . . Selected methods are published in booklet to share company's knowledge

Glenn L. Martin Co.
51 Glenmar St., Baltimore 3, Md.

Seventeen articles from "The Martin Star", company's house publication, are reprinted in new 40-page booklet under the title of "Modern Techniques in Aircraft Manufacturing". They stress importance of making employees cost-conscious and show a variety of methods for doing so.

BREVITY—Identify by IEN - 4607 if you write the maker

DIE CASTING . . Textbook on the subject deals with equipment, materials, production, finishing

McGraw-Hill Book Co.
327 W. 41st St., New York 18, N. Y.

H. H. Doehler of Doehler-Jarvis Corp. is author of new 502-page book, "Die Casting", list price $8. Text, pictures and drawings describe die-casting machines, dies, casting design, alloys, finishing, machining, trimming, inspection, cost estimation, comparison with other production processes.

BREVITY—Identify by IEN - 4608 if you write the maker

DRIVES . . How to use roller chain in pull applications described in booklet

Baldwin-Duckworth Division
358 Plainfield St., Springfield 2, Mass.

"Tension Linkages" titles new 16-page Bulletin 51-10 on the use of roller chain for lineal pull service in which the chain is not endless. Diagrams show typical examples, selection procedure is detailed, data are included on the company's "Rex" roller chain in single to quadruple width, specials, turnbuckles.

BREVITY—Identify by IEN - 4609 if you write the maker

ENGINEERING . . Special summer courses to be given at MIT on specific engineering subjects

Massachusetts Institute of Technology
77 Massachusetts Ave., Cambridge 39, Mass.

Three courses in mechanical engineering and one on servomechanisms will be given during the Institute's summer session. Lubrication engineering, metal cutting, hydraulic power control are the first three courses. A schedule of activities and details on individual courses are available upon request.

BREVITY—Identify by IEN - 4610 if you write the maker

GEAR CUTTING . . House publication article on production of small elliptical gears by hobbing

Barber-Colman Co.
1312-16 Rock St., Rockford, Ill.

"Hobbing Notes" in its Vol. 8 No. 6 issue describes how elliptical gears are produced on a standard hobbing machine by the cutter previously described IEN-11541-50. The publication will be sent you on request if your interest lies in design or production of gears by the hobbing process.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4611 if you write the maker

JOE KNOWS ALL ABOUT JUDO—A LITTLE PRESSURE PROPERLY APPLIED AND WHAM

JUDO CLASS

But look at him apply that wrench to the wrong end of a new O-B GLOBE VALVE. Always apply wrench force to the hex next to the pipe end to prevent distortion of valve body.

Send for free book on valve installation tips

Ohio Brass VALVES
MANSFIELD OHIO

BREVITY—Identify by IEN - 4612 if you write the maker

REEVES VARI-SPEED MOTOR PULLEY

CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower

1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

2 Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for FREE Catalog IN11b-G.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

BREVITY—Identify by IEN - 4613 if you write the maker

vital messages stay stuck

with informative pressure-sensitive Kum-Kleen labels

HERE'S A POWER CHARGE produced by the Baker Oil Tool Co. that would be dangerous to handle without safety precautions, instructions, and other vital information directly on the product. Kum-Kleen labels were selected for this vital labeling job because they can be depended upon to stick-and-stay-stuck, will not pop, curl, or peel even in extremes of heat and humidity. Kum-Kleen pressure-sensitive labels are applied without moistening. They stay stuck to hard-to-label surfaces such as cellophane, pliofilm, polyethylene, glass, metals, varnished wood, etc. For positive, durable and economical labeling, get the facts on Kum-Kleen. They can be produced to your size, shape, color and printing specifications for use in many phases of industrial operations. *Write for Samples and Details Today!*

Kum-Kleen

ADDRESS DEPT. IEN-5.
AVERY ADHESIVE LABEL CORP.
MONROVIA, CALIFORNIA

BREVITY—Identify by IEN - 4614 if you write the maker

CONE PULLEYS CONTROLLERS GEARS ASH CAN SLIP RING MOTORS FLEXIBLE COUPLINGS

Good bye contraptions

Good buy VARIDRIVES

ALL-IN-ONE:
MOTOR
SPEED CHANGER
GEAR REDUCER

VARIDRIVE

The miracle motor with thousands of speeds. Occupies little more space than ordinary motor. Big dividend earner. ¼ to 50 h.p. 2 to 10,000 rpm. Request Bulletin.

U.S. ELECTRICAL MOTORS Inc.
Box 2058, Los Angeles 54, Cal. or Milford, Conn.

US MOTORS

BREVITY—Identify by IEN - 4615 if you write the maker

these
AO COVERGLAS GOGGLES
Protect both Eyes and Personal Glasses

Safety Goggles

AO 321A

Here's impact protection at its best on operations where flying particles coming from any direction endanger eyes, such as in chipping, grinding, babbitting, riveting, hand tool and machine work, spike driving and rail and rivet cutting. Right weight for comfort.

AO 323A

Here's top quality eye protection against harmful light rays, glare, flying sparks and scale for gas welders, burners, cutters, brazers and furnace men.

Your nearest AO Safety Products Representative can supply you.

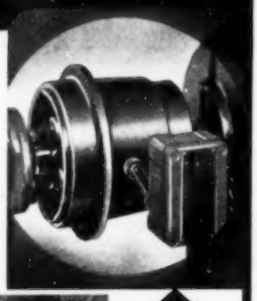
American Optical COMPANY
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

BREVITY—Identify by IEN - 4616 if you write the maker

Can it improve YOUR PRODUCTS? YOUR PRODUCTION?

ANCHOR TORQUE-SENSITIVE MECHANICAL *Control*



COUPLINGS for all direct drives

(Incorporates standard flexible coupling) Operating range 10 to 2,000 inch pounds.

PULLEYS for belt or chain drives
Operating range 20 to 10,000 inch pounds

● These automatic mechanical units make use of increasing torque to control the operation of machinery. They protect machinery from overload and reduce "down time" by eliminating sheared pins. They will also operate signals to give ample warning of build up in load.

Since 1938 many large industries have specified ANCHOR CUT-OUTS. They are the established "protection method" for the conveyor industry.

WRITE FOR CATALOG 50A

ANCHOR STEEL & CONVEYOR CO.
DESIGNERS & MANUFACTURERS
6906 Kingsley Ave., Dearborn, Mich.

BREVITY—Identify by IEN - 4618 if you write the maker

CUTTING . . Acetylene torch machine with tracer control, motorized holders

Source: AIR REDUCTION SALES CO.
1656 Lincoln Bldg., New York 17, N. Y.

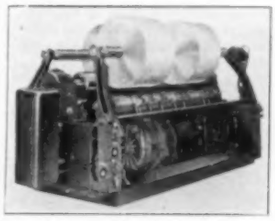
Multiple cuts can be made and any or all of the torches in this new Travograph acetylene-torch assembly can be advanced to cut or retracted to idle at the operator's push-button station. The equipment is a combination of the company's electronically-controlled tracing device known as the "electronic blood hound" and an Airco No. 40 Travograph on which four torches mount in new motor-equipped holders.

This holder applies on the 3-in. square torch bar of the cutting machine and takes the company's 1⅜-in. rack-type machine cutting torch. A motor mounted in its head moves the torch axially through 5-in. advance or retraction when its circuit is actuated at a control housing assembling 5 push-button switches. One of these switches will move four torches simultaneously. One each of the other four moves an individual torch. In the illustration the electronic tracer is shown at A, the torch-control station at B and the four motorized torch holders at C across the supporting bar.

BREVITY—Identify by IEN - 4619 if you write the maker

CUTTING . . Slitter and rewinder for fabrics, foils, paper, plastics

Source: BAGLEY & SEWALL
500 Fifth Ave., 21st Floor, New York 18, N. Y.



Slitting cutters, pneumatically operated, can be positioned along a bar beneath trunnion-mounted rolls in this new No. 15 Duplex rewinding machine to cut strips from the rolls as narrow as ½ inch. The machine takes rolls from 42 to 92 in. in width, 36 in. in diameter. It employs hydraulically-driven differential rewind shafts with provision for pressure control between the drum and the shaft. Hydraulic and pneumatic lines are enclosed in the frame.

Drive is by a Louis-Allis variable-speed assembly for operation to a maximum of 1,500 fpm. A variable-volume pump is driven by a second motor to supply power to the rewind shafts. Pressure control and precision winding are accomplished by pneumatic cylinders that raise and lower the rewind arms. The rewind shafts can be locked in "out" position for full-center winding.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4620 if you write the maker

STOP TAKE-UPS and DOWN-TIME with...

LEATHER for Greater Pulley Grip and Durability!
RAYON CORDS eliminate stretch and maintenance.
CORDAN LEATHER BELTS deliver More Power, More Production Longer!
CORDAN LEATHER BELTS hold tension, reduce slippage, practically eliminate take-ups and down-time.

Write TODAY for descriptive, illustrated literature.

ESTABLISHED 1881 **S. R. SIKES COMPANY**
MINNEAPOLIS 15, MINNESOTA

BREVITY—Identify by IEN - 4621 if you write the maker

Be fresh... stay fresh

wear a DUPOR No. 20
Water-Cooled Respirator

Double sponges dipped in water before wearing provide cool breathing even under hot, smoky conditions. Recommended for use of workers in paint shops, foundries, steel mills, oil refineries, chemists, firemen, etc. Face mask is of rubber, equipped with DUPOR "controlled breathing" valves. Wearer has a panorama view with no blind spots. Glasses or goggles can be worn with unit.

Sample sent
$2.50 ppd

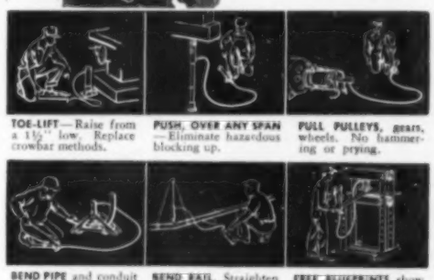
H. S. COVER
South Bend, Ind.

BREVITY—Identify by IEN - 4622 if you write the maker

Here's why EVERY shop needs *Porto-Power*

Right—10-ton hydraulic ram with pump and high pressure hose.

Save up to 9 manhours moving a single machine! Do "1001" other tough jobs. No other equipment can do the work of low-cost "Porto-Power" remotely-controlled hydraulic jacks and attachments! 2, 4, 7, 10, 20 and 50-ton sizes. Buy from leading supply houses. Write for free catalog.
Blackhawk Mfg. Co., Dept. P-1451
Milwaukee 1, Wisconsin.



TOE-LIFT—Raise from a 1½" low. Replace crowbar methods.
PUSH, OVER ANY SPAN—Eliminate hazardous blocking up.
PULL PULLEYS, gears, wheels. No hammering or prying.
BEND PIPE and conduit the easy, profitable, fast way.
BEND RAIL. Straighten parts. Insert or remove bushings, pins, etc.
FREE BLUEPRINTS show how to build low-cost pcs.for "Porto-Power".

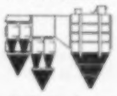
BLACKHAWK

BREVITY—Identify by IEN - 4623 if you write the maker

buell KNOWS DUST RECOVERY

Buell van Tongeren Cyclone

Buell "SF" Electric Precipitator



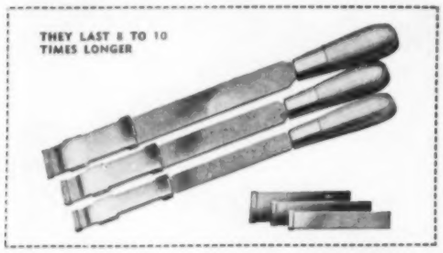
Combination Cyclone-Precipitator Unit

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall – continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Suite 5030, 70 Pine St., New York 5, N. Y.

buell
Engineered Efficiency in **Dust Recovery**

BREVITY—Identify by IEN - 4624 if you write the maker

Carboloy Tipped
SCRAPER BLADES



Speed up scraping operations with these efficient blades. They are especially good for hard alloy iron and the extremely hard bronze castings. If you are already using Anderson Hand Scrapers it is not necessary to buy complete new scrapers in order to use carboloy tipped blades. Simply remove the high-speed steel blade and slip in the Anderson Carboloy Tipped Blade. They are available in three widths.

ROCKFORD Anderson BROS. MFG. CO. ILLINOIS

Send for Bulletin 5-35

ANDERSON BROS. MFG. CO., Rockford, Ill.
Hand and Power Hydraulic Presses • Balancing Ways
Roto Checkers • Hand and Power Scrapers • Spotters

BREVITY—Identify by IEN - 4625 if you write the maker

This HOMESTEAD VALVE Opens or Closes Instantly

It's STICK-PROOF because it's LEVER-SEALD

HOMESTEAD LEVER-SEALD QUARTER-TURN VALVES are first choice where extremes of temperature, pressure, or corrosive fluids, cause ordinary valves to "stick" or "seize."

They are "stick-proof" because built into each valve is a lever-and-screw device that prevents sticking and assures positive action under all conditions.

They operate 16 to 28 times faster than screw-stem type valves. They are ideal for installation in restricted areas, where other types of valves could not be used. Next time specify Homestead LEVER-SEALD Quarter-Turn Valves. You'll never be satisfied with ordinary valves again.

Send for "Valve Reference Book No. 39-3."

Homestead Lever-Seald Quarter-Turn Valves are available in metals and alloys to suit your needs in sizes from 1½" to 10" for pressures from vacuum to 1500 lbs.

HOMESTEAD VALVE MANUFACTURING CO.
"Serving Since 1892"

P. O. Box 85 Coraopolis, Pa.

BREVITY—Identify by IEN - 4626 if you write the maker

power modernization

demands modern engineering design

STERLING
SLO-SPEED
OUTSTANDING FEATURES...

Simplified gear system—balanced design—compact—rugged—heavy overhung loads—highly efficient—abundant lubrication—low output shaft—Herringbone Rotor—positive oil seals—protected—streamlined—through ventilation—quiet operation—AGMA speeds—long life—every unit operates in any position.

Ask for your copy of pictorial bulletin No. E 62 showing Sterling Electric Power Driven Turning The Wheels of Industry.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 27, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

NEWS NOTES—Continued

"Financial report that employees can understand"

BREVITY—Identify by IEN - 4627 if you write the maker

LIGHTING . . Useful information booklet suggests six methods of lighting industrial plants

General Electric Co.
1 Nela Park, Cleveland 12, Ohio

Specific examples are used for six recommended industrial lighting methods in new 48-page Bulletin LD-4, "Planned Lighting for Industry." Each example includes type of fixture, spacing, illumination level. Other examples show methods of lighting special work such flaw inspection, color discrimination, hazardous locations, outdoor platforms and yards.

Engineering lighting to the job is described in an introductory section with emphasis on basic essentials of seeing. There is a table of recommended illumination levels accompanied by pictures of actual installations. Office lighting is described.

BREVITY—Identify by IEN - 4628 if you write the maker

LIGHTING . . Booklet suggests plan to replace lamps as a group in an installation

Sylvania Electric Products Inc.
1740 Broadway, 16th Floor, New York 19, N. Y.

Cost figures are given in new 8-page Bulletin FL-422 for an installation of 1,000 lamps operated through a 5,000-hour period. They are compared for the company's suggested method of replacing all lamps at one time as against replacing each lamp as it fails. You may be interested in the figures.

BREVITY—Identify by IEN - 4629 if you write the maker

MANAGEMENT . . Financial report for employees presents the figures in readily-understood manner

Hercules Cement Corp.
1420 Walnut St., Philadelphia 2, Pa.

Example of what can be done to describe a company's finances to its own employees is the new 12-page booklet, "What We Accomplished During 1950", published by Hercules Cement Corporation. It uses figures from the financial statement to summarize the year's business and to tell where the money came from and where it went.

Manner of treatment parallels the pattern developed by the American Economic Foundation in its "Functional Operating Report". Typical headings list what was received from customers, cost of goods and services purchased from others, cost of tools wearing out, cost of taxes, cost of human energy, cost of using the tools of production.

BREVITY—Identify by IEN - 4630 if you write the maker

MANPOWER . . Booklet invites engineers to work for the company by describing its setup

Raytheon Mfg. Co.
188-92 Willow St., Waltham 54, Mass.

"Opportunities at Raytheon" is addressed to engineers and physicists in electrical, electronic and mechanical engineering. Its 12 pages describe what the company makes, its facilities, activities, living conditions nearby. You may be interested in a copy as an example of how to recruit technical manpower.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4631 if you write the maker

MERRILL
MATERIALS HANDLING DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVE., MASPETH, N. Y.

BREVITY—Identify by IEN - 4632 if you write the maker

EVERLASTING
the Wear-Resisting Valve

WILL NOT STICK . . . because of its non-corrodible materials; WILL NOT WEDGE . . . because the disc travels parallel to the seat; WILL NOT CLOG . . . because of its straight through flow; WILL NOT LEAK . . . because its seal is kept drop-tight by the self-lapping action of the disc rotating on the seat whenever the valve is opened or closed.

EVERLASTING Valves are literally unequalled for many services on process lines, emergency shut-offs, equipment outlets, boiler blow-off, fire protection, etc., and are suitable for all fluids.

WRITE FOR BULLETIN

EVERLASTING VALVE CO.
49 Fisk Street Jersey City 5, N. J.
Trade Mark "EVERLASTING" Reg. U. S. Pat. Off.

Everlasting Valves
for everlasting protection

BREVITY—Identify by IEN - 4633 if you write the maker

IT'S HERE!

Grafo R-3

A Smokeless Colloidal Graphite
FORGING COMPOUND
that
Increases die life
Insures surface quality
Eliminates fire hazards
A WORKING SAMPLE SENT ON REQUEST

Other Grafo Colloidal Products Available For All Industrial Lubrication

"Grafo" Colloidal Graphite may be obtained in water, petroleum oil, castor oil, in concentrated, semi-concentrated and ready-to-use mediums.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION

MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

SHARON, PENNSYLVANIA

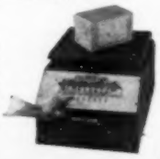
BREVITY—Identify by IEN - 4634 if you write the maker

DETECTO SCALES

There's a precision-accurate Detecto Scale for your specific weighing and counting need. The Detecto helps increase production, yet assures you maximum accuracy by making slightest weight discrepancies immediately visible.

DETECTO POST-O-METER

Another Detecto Scale that protects your profits. With the Detecto Post-O-Meter, you just press a key and get one precise to-the-penny magnified figure. Thermolastic spring compensates for temperature changes.

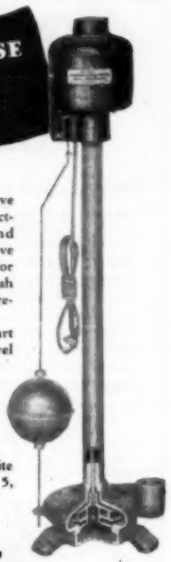


Write for Literature

DETECTO SCALES • INC.
MAKERS OF FINE SCALES SINCE 1900
5486 PARK AVENUE • BROOKLYN 5, N. Y.
SCALE ENGINEERS IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 4635 If you write the maker

FAIRBANKS-MORSE INDUSTRIAL SUMP PUMPS



Handy, dependable. Save thousands of dollars by protecting machinery, merchandise and buildings from damage by excessive seepage and flash floods. Ideal for use in boiler and elevator pits, ash dumps, machinery base pits, storerooms, and many other places.

Fairbanks-Morse sump pumps start when water reaches pumping level ...shut off when danger is passed. Can be left unattended. Made for 2-foot sump pits. Extension columns available when settings require them. For complete details of sizes, construction features, pumping capacities and prices, write Fairbanks, Morse & Co., Chicago 5, Illinois.

FAIRBANKS-MORSE,
a name worth remembering

DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS
SCALES • HOME WATER SERVICE EQUIP. • RAIL CARS • FARM MACHINERY

BREVITY—Identify by IEN - 4636 If you write the maker

Amazing
ALEMITE
OIL-MIST
AUTOMATIC LUBRICATION SYSTEM
Revolutionizes Machinery Lubrication

Unbelievably simple system atomizes oil into mist, distributes it through tubing to bearings. Bathes all bearing surfaces with fresh, clean, cool oil film. Uniformly maintains oil film on all sliding, rubbing, rolling parts regardless of variations in load, temperature or speed! No "peaks and valleys" of lubrication.

Fully automatic—eliminates waste and the uncertainties of the "human element." Extends bearing life as much as 17½ times. Seals bearings against dirt and abrasives. Cuts oil consumption as much as 90%. Greatly reduces the number of oils needed.

Desk-Top Demonstration, No obligation

A note on your Company letterhead will bring a trained Alemite Lubrication Representative to your offices. In a brief yet thorough Desk-Top Demonstration, he will tell you how Alemite Oil-Mist can provide more positive lubrication at lower cost than you ever thought possible. Write Alemite Division of Stewart-Warner, Dept. K-51, 1850 Diversey Parkway, Chicago 14, Illinois

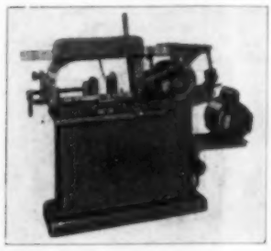
STEWART WARNER

Alemite
OIL-MIST
Automatic Lubrication System

BREVITY—Identify by IEN - 4638 If you write the maker

SAWING . . Hack saw machine, 6 in. stroke, takes 12 or 14 in. blade

Source: SALES SERVICE MACHINE TOOL CO.
2361-65 University Ave., St. Paul 4, Minn.



Model 3CH is a new machine in the company's Keller line of motor-driven hack saws. It operates at either 70 or 125 spm. and will handle materials measuring to 6¾ in. in square cross-section. It is equipped with a swivel vise, controllable feed and limit stop. Coolant is carried in a tank in the base for pump circulation to the work. Rotating shafts operate in Oilite bearings. The motor rates ½ hp. With the addition of this new machine the line now contains eight models in a price range from about $100 to $500.

BREVITY—Identify by IEN - 4639 If you write the maker

LUBRICATING . . Wax base stick produces clean free sliding surfaces

Source: DECTO PRODUCTS CO.
76-80 North St., Salem, Mass.

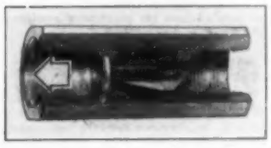
List price is 25 cents per stick

Run-Smooth trade names new wax-base lubricant that is packaged in a cardboard cylinder measuring 1 by 4 inches. The wax is pressed out of the cylinder a small distance at a time and is rubbed on sliding surfaces such as drawers, doors, windows, office files. It coats the surface with a free sliding film. It will not mar or stain wood, plastic or metal. It contains no graphite. List price is 25 cents per stick. Packaging is 12 sticks to a box.

BREVITY—Identify by IEN - 4640 If you write the maker

VALVE . . Hydraulic check design, ½ to 2 in., pressure to 5,000 pounds

Source: GREER HYDRAULICS INC.
464 18th St., Brooklyn 15, N. Y.



Cylindrical stem is secured in stationary position at the center of this new check valve to act as a guide for the plunger that rides upon it, as a retainer for the return spring enclosed by it and the plunger and as a dash pot in connection with a restricted orifice on the outlet side. Opening flow is opposed by the dash-pot action and by the spring. Closing action is assisted by the spring, but is again opposed by the restricted orifice through which fluid must flow into the stem to permit seating movement of the plunger.

Operation is in either direction without shock or hammer effect. The plunger is shaped to minimize pressure drop.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4641 If you write the maker

ZIP OFF

SCALE
RUST
PAINT

with
AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, thoroughly removes scale, paint, rust, and other accumulation from any hard surface. Renewable cutter heads and foot-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS.
WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

BREVITY—Identify by IEN - 4642 If you write the maker

Hammond of KALAMAZOO says **WET**
ABRASIVE BELT GRINDERS—POLISHERS

ABRASIVE BELTS
- CUT COOLER
- CUT FASTER
- DO NOT DISCOLOR OR BURN WORK
- IMPROVE FINISH
- STEP UP PRODUCTION

Model VH-6 — WET-n-DRI, 6" Abrasive Belt Grinder-Polisher, Vertical or Horizontal Operation. Independent coolant unit or water main connection.

Model 400 — WET-n-DRI, 4" Abrasive Belt Grinder-Polisher. Floor or Bench Models. Independent coolant unit or water main connection.

Hammond Machinery Builders
1607 Douglas Avenue, Kalamazoo, Michigan

BREVITY—Identify by IEN - 4643 If you write the maker

Dick 960 A B Dick 960 A B Dick 960
GRAPH MIMEOTYPE MIMEOGRAPH MIMEOTYPE

NEW A. B. DICK MIMEOGRAPHS
black-on-white **COPIES** or colored copies of anything typed, written or drawn
produced **FAST** on most all paper and card stocks at speeds ranging up to 180 copies per minute
and **EASY** on today's A. B. Dick mimeographs with many new features and improvements for more efficient operation.

WRITE TODAY for full details

A B DICK COMPANY
5700 Touhy Ave. • Chicago 31, Illinois
For use with all makes of mimeo stencil duplicating products

BREVITY—Identify by IEN - 4644 If you write the maker

FREE MANUAL
tells how **DY-NAMIC BALANCING** CAN IMPROVE YOUR DEFENSE PRODUCTION!

This New "Bear" Manual will show you how Dy-Namic Balancing can aid your defense production program these two ways:

1 Improve finished product performance by eliminating mechanical failures and assuring greater efficiency and longer life. Gives you the quality standards to help meet many government contract specifications.

2 Keep your own equipment operating without interruption. Periodic checking and Dy-Namic Balancing of rotating parts in your machinery and production equipment will reduce bearing wear and noise and eliminate costly downtime for repairs.

Write today for your free copy. Bear Mfg. Co., Dept. 1-5, Rock Island, Illinois.

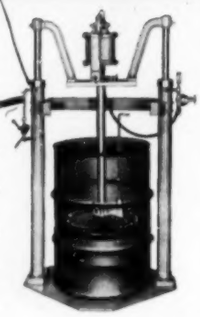
24 PAGES OF VALUABLE INFORMATION LIKE THIS:
- How To Balance Parts From 4 Oz. to 8 Tons!
- What Is Dy-Namic Un-balance?
- The Difference Between Static and Dy-Namic Un-balance!
- How To Balance Rotating Parts Statically and Dy-Namically In One Operation!
- How Other Plants Are Using Dy-Namic Balancing To Save Time and Money!
- How Dy-Namic Balancing Improves Product Performance!
- How Dy-Namic Balancing Reduces Wear, Eliminates Noise And Vibration.
- Details, Specifications And Engineering Data About Complete Line of 'Bear' Industrial Dy-Namic Balancing Machines.

"BEAR"
STATIC AND DY-NAMIC BALANCING MACHINES

BREVITY—Identify by IEN - 4645 if you write the maker

FAST-THRIFTY WAY to pump the heaviest materials

VERSATAL power operated FOLLOWER PLATE PUMP



- Completely empties and cleans the sides of a 55-gallon drum.
- Stops contamination—does not allow air to reach the material.
- Prevents material from drying out or "skinning over."
- Saves important money on barrel cleaning.
- 5836 lbs. atmospheric pressure on the material, assures safe, positive prime.

Free — write now for literature giving full data. Address Alemite, Dept. B-51, 1830 Diversey Pkwy., Chicago 14, Ill.

Another Product of Stewart-Warner

ALEMITE Versatal

BREVITY—Identify by IEN - 4646 if you write the maker

Generalift PALLET BOXES

CUT MATERIALS HANDLING COSTS

REDUCE STORAGE COSTS

SEND FOR FREE BOOKLET TODAY

GENERAL BOX COMPANY.. engineered shipping containers

GENERAL OFFICES: 508 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon.
Continental Box Company, Inc., Houston, Dallas.
General Box Company of Mississippi, Meridian, Miss.

BREVITY—Identify by IEN - 4647 if you write the maker

LET Clarke SHOW YOU . . .

A Better Way of Floor Care!

HERE IS JUST PART OF THE CLARKE LINE:

Only actual use can demonstrate the overall superiority of Clarke maintenance machines. Widespread use in churches, schools, hotels, hospitals and industry is only partial assurance of guaranteed performance. We want to show you — on your own floors — why Clarke machines have long been preferred for all phases of floor care.

CLARKE FLOOR MAINTAINERS
Four sizes for any application. Scrub, wax, polish, steel wool, sand, and shampoo. Improved safety switch. "Self-lifting" wheels.

CLARKE WET and DRY VACUUM CLEANER
Picks up water, dirt. Quick dump valve, no lifting. Powerful suction . . . neoprene hose.

Sales and Service Branches in All Principal Cities

CLARKE SANDING MACHINE COMPANY
285 Clay Street, Muskegon, Mich.
Please rush me hints on easier and faster floor care and more information on the following machines:
Clarke Floor Maintainers ☐
Clarke Wet and Dry Vacuum Cleaner ☐
Please arrange a free demonstration ☐
NAME
ADDRESS
CITY ZONE STATE

NEWS NOTES—Continued

"Training course in motor selection and use"

BREVITY—Identify by IEN - 4648 if you write the maker

MOTORS . . How to select and apply them described by slide film and instruction booklets

General Electric Co.
Dept. 6X-201, Schenectady 5, N. Y.

Fifteenth educational program in the company's "More Power to America" series is a new training course in electric motor selection and application. It consists of nine 35-mm. slide films with showing time of 15 to 30 min., a 16-in. sound record to accompany each film, student review booklets on each lesson, and a 96-page instructor's manual. The instruction material in a carrying case lists at $100.

First three lessons are on fundamentals of motors, types of motors, motor selection. The audience to the right in the illustration is looking at the first lesson. The other lessons are on how to select and apply polyphase induction motors, single-phase integral-horsepower motors, dc. motors, synchronous motors, variable-speed drives and gearmotors.

BREVITY—Identify by IEN - 4649 if you write the maker

PLASTICS . . Three technical bulletins on molding, properties, uses of Alkyd plastic

Libbey-Owens-Ford Glass Co.
2114 Sylvan Ave., Toledo 6, Ohio

Bulletin A-3 is a new 6-page technical folder on mold design, material storage, preforming, preheating and molding of Plaskon Alkyd plastic. Bulletin A-4 lists properties. Bulletin A-7, 8 pages, details electrical, dimensional, chemical properties with eight illustrated application examples.

BREVITY—Identify by IEN - 4650 if you write the maker

TECHNICAL WRITING . . Editorial service to prepare technical publications on electronic equipment

Philco Corp.
Lehigh & 22nd St., Philadelphia 32, Pa.

Recently enlarged facilities are announced for the company's Technical Publications Department to include some 200 writers, editors, artists, draftsmen, illustrators, typists. The service applies particularly to electronic equipment for Government and industry. It covers publications from parts catalogs to manuals on installation, operation, maintenance and training for complex equipment. It includes classified Government work also.

Operation is on a fixed-price basis for a job. Estimates are available without charge to prospective customers. A summary of the service and facilities is given in 4-page bulletin, "Modern Manuscript Magic," available upon request.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4651 if you write the maker

RAILS NEW and RELAYING

MOST COMPLETE STOCKS IN U. S. SHIPPED "FASTER FROM FOSTER"
Foster matches sizes and specifications on any job. All material guaranteed—backed by a half century of specialized rail warehousing service.

STEEL SHEET PILING

RENT IT . . .
The Exact Lengths and the Exact Sections to meet all your needs. Also complete stocks of Light-weight Corrugated Steel Sheet Piling. Foster's new lower rental rates on all standard piling sections give you a low fixed expense as an added advantage when you bid on jobs; and you also get the famous FOSTER QUALITY GUARANTEE.

TRACK ACCESSORIES
STEEL PIPE
PIPE FABRICATION
WIRE ROPE
WIRE SLINGS
STEEL PLATE
Write for Pile Chart IE-5

ONE TON OR A THOUSAND "FASTER FROM FOSTER"

L.B. FOSTER CO.
PITTSBURGH 30, PA. NEW YORK 7, N. Y.
CHICAGO 4, ILLINOIS HOUSTON 2, TEXAS

BREVITY—Identify by IEN - 4652 if you write the maker

CERRO ALLOYS speed DEFENSE PRODUCTION!

Do you need a fast method to:

Anchor bearings; bushings; punches in dies for blanking, piercing and trimming; stationary parts in machinery, etc. . . .
Make split jaw chucks . . .
Support delicate parts during machining . . .
Bend thin-walled tubing, wave guides, moldings, extruded shapes . . .
Form sheet metal parts (short run) . . .
Make duplicate patterns for match plates . . .
Make molds for wax patterns, etc. . . .
Make assembly, checking and die spotting fixtures?

Just write or phone for our useful folder:
"How to Select and Use Low-Melting Alloys as Production Aids."

It will tell you how to do the above operations. DO rating required for prompt delivery of alloys.

CERRO de PASCO COPPER CORPORATION
40 Wall Street Dept. 6 New York 5, N. Y.

BREVITY—Identify by IEN - 4653 if you write the maker

Design with AIR!
Pressure • Vacuum • Suction

Handle all these jobs!
Lifting—holding—chucking—sorting—cleaning—drying—cooling—separating—mixing—agitating—feeding—blowing—leak-testing—pressure-boosting, etc.

COUNTLESS jobs are done faster, simpler, less expensively by using pressure, vacuum or suction provided by Leiman Air Pumps. Air is the only reliable, trouble-free solution to many operations. Learn more about the great possibilities of designing with air. Leiman engineers offer over 60 years' experience with thousands of air applications. Outline your application for recommendation and suggestions. Write for data outlined below.

Your most efficient air source— LEIMAN AIR PUMPS

Take up their own wear!

IF an air pump can do it—a Leiman Air Pump will do it best! Simple, compact design provides greater capacity, size for size . . . has fewer moving parts . . . provides a continuous flow of air . . . is extremely quiet in operation . . . uses no gaskets or packing . . . maintains leakless fitting for life . . . requires no storage tanks . . . needs little or no maintenance . Range of sizes for pressure up to 25 lbs. p.s.i. or vacuum up to 29". Specify Leiman Air Pumps on equipment you buy—install them in equipment you build. Get engineering data.

Exclusive Leiman hinged wing design permits wings to wear uniformly, maintaining full pressure or vacuum, after 15 and 20 years' steady service.

WRITE FOR ENGINEERING DATA

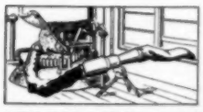
•16-PAGE CATALOG showing construction, types, sizes, capacities, etc.
•APPLICATION FOLDER. Contains 60 "how-to-do-it" blueprints of actual applications. Will suggest many more.

LEIMAN BROS., Inc.
166 Christie St., Newark 5, N. J.
AIR PUMPS • AIR MOTORS • SAND BLASTS • DUST COLLECTORS

BREVITY—Identify by IEN - 4655 if you write the maker

Ventilate CONFINED Places with Vano Design "C" Ventilator-Exhauster

WELDING FUMES are here removed by this Vano Ventilator-Exhauster.



FUMES FROM A REACTOR KETTLE are here withdrawn by tripod-mounted Vano Ventilator-Exhauster. Note non-collapsible suction tubing and discharge tubing.

Ideal for withdrawing welding fumes from confined places or directly from the welding rod. Provides greater safety, greater comfort for workers . . . leads to greater work efficiency. Can be furnished with 8" suction inlet to which 8" non-collapsible suction tubing may be attached . . . or provided with multiple inlet nozzles for 5", 4" and 3" suction hose.

Other types are also available for supplying fresh air to men working in confined places, such as tanks, manholes, drums, boilers and shipholds.

For full details on Coppus Vano Design "C" Ventilator-Exhauster write COPPUS ENGINEERING CORPORATION, 146 Park Avenue, Worcester 2, Mass.

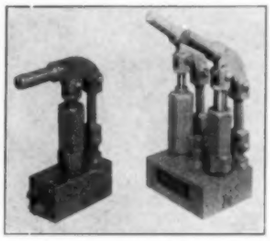
ANOTHER COPPUS "BLUE RIBBON" PRODUCT

BREVITY—Identify by IEN - 4656 if you write the maker

HAND HYDRAULIC PUMP

Single and Double Designs

To 20,000 P. S. I.



Interchangeable Pistons 1-1-1 inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 cu. in.

Pressure range is 3,000 to 20,000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position.

WILLIAM S. PINE

1637 E. 22nd St., Los Angeles 11, Calif.

BREVITY—Identify by IEN - 4657 if you write the maker

The Quick, Easy, Handy Way to TAP BY HAND

. . . Adapts for LATHE USE

THE DAHLSTROM TAP GUIDE virtually eliminates tap breakage—and saves those costly hours spent prying broken taps out of dies. Saves time, too. Just a few turns of the handle and the job is done.

Winds through continuously, with no backoff. Work is always dependably straight and square. Fasten it to a post or set it on top of a big job. This handy tapper comes equipped with 9 adaptors, 8-32 to ¾" but taps are not furnished. Spindle can be pulled out and used in a lathe, or used as tap extension for hard-to-get-at-places. 13" x 8" x 14", wt. 32 lbs. Send for free pamphlet.

Also Makers of Dahlstrom Autostop and Tap Chuck

DAHLSTROM MFG. CO.

2516 W. Larpenteur
ST. PAUL 8, MINN.

Dahlstrom TAP GUIDE — 59.50 F.O.B. ST. PAUL

BREVITY—Identify by IEN - 4658 if you write the maker

PACKAGING . . Motor driven machine measures powder into small container

Source: PLAGEMAN ENTERPRISES
120-24 Sylvia, Willoughby, Ohio

Rotating feeder combined with an agitator in the cast aluminum housing of this new Model PPO-1 machine delivers powder from the supply hopper to a clamshell type of measuring bucket. The feeder also sweeps the top of the bucket and closes off the feed for the interval during which the bucket stands open for gravity delivery of the measured fill to the container under the spout.

A blower mounted at the front of the machine opens packets when this type of container is used. It can be removed from the machine when filling other types of containers. A butterfly valve on the blower nozzle is opened and closed by a solenoid actuated by a Micro switch and cam on the main shaft. Another cam on the same shaft operates a switch and solenoid to open and close the measuring bucket at the proper intervals for discharge and refill.

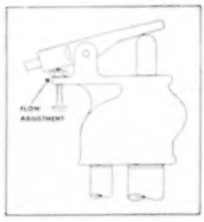
Capacity ranges between a fill equivalent to a tube ⅜ in. in diameter by 1 in. long to a tube measuring 1½ by 2½ inches. The correct size of measuring bucket is applied in the machine for each predetermined amount.

Surfaces in contact with the product are made of aluminum, stainless steel or chromium-plated metal. Other parts of the machine are finished in green enamel. Floor space measures 14 by 18 in. with height at 56 in. and weight at 92 pounds. Operation is at 15 to 50 cycles per min. as predetermined and set for each given product.

BREVITY—Identify by IEN - 4659 if you write the maker

VALVE . . Seatless, float operated, with plunger riding in neoprene rings

Source: NEWHOUSE & SON INC.
4953-57 Delmar Blvd., St. Louis 8, Mo.



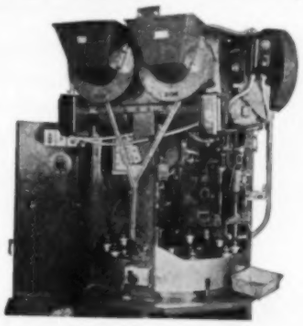
Neoprene rings assembled in this new brass-body float operated valve contact and support the plunger above and below the flow chamber. They seal against flow as long as the operating float holds the plunger down at the bottom of its movement. Decrease in water level in the tank or chamber in which the valve is assembled permits the float to move downward and water pressure, attempting to enter the valve from the bottom, moves the plunger upward.

The lower end of the plunger is tapered to a "chisel point" so the tapering flats on the two sides provide a varying orifice through the lower of the two rings for variable flow. The amount can be limited by setting the adjusting screw below the operating lever. Inlet and outlet take ⅜ and ½-in. pipe respectively. Distance from the base of the body to the lever hinge point measures 1⅞ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4660 if you write the maker

These KRAUS HOPPERS



Save $45.00 per day!

Four Kraus Hoppers applied to Sciaky Welder to feed two sizes of two different pieces, actually save $45.00 per day for one manufacturer of electrical equipment. A metal housing is inserted manually and assembly and ejection are completely automatic.

This saving is typical where Kraus Hoppers are used. Every Kraus Hopper is specifically designed to handle the particular job to which it is applied. For complete information on adapting this dollar saving equipment to your process, send sample parts, with orientation and delivery requirements to

KRAUS DESIGN INC.

948 EXCHANGE ST. • ROCHESTER 8, N. Y.

BREVITY—Identify by IEN - 4661 if you write the maker

Northern HI-LIFT CRANES

MOVE BIGGER, HEAVIER LOADS QUICKER

Your material handling costs can be cut dependably by moving bigger, heavier loads quicker—by reducing the number of material handling movements. NORTHERN HI-LIFT CRANES and HI-LIFT HEAVY DUTY HOISTS can do it for you.

Let us send you our
NEW BULLETIN HL-113

NORTHERN ENGINEERING WORKS
2615 Atwater St., Detroit 7, Michigan

Northern HI-LIFT HOISTS

BREVITY—Identify by IEN - 4662 if you write the maker

. . . about hand pumps. He's tried 'em all and he knows liquid handling from A to Z.

"Nothin' but Bowser for my jobs," Mike says. "They're always rarin' to go and they put it out fast without wearin' you out.

"Service? No sir! They're workin' fools—never had a wrench on 'em yet, and it's more'n five years."

Mike's experience is "run of the mill" for Bowser Hand Rotary Pumps. May we send you a folder that explains WHY?

BOWSER, INC. — 1338 CREIGHTON AVENUE — FORT WAYNE 2, INDIANA

BREVITY—Identify by IEN - 4663 if you write the maker

Another Contribution To Better Precision Measuring BY THE WORLD'S GREATEST TOOLMAKERS

Educational, Instructive, Entertaining

A "MUST" FOR YOUR TRAINING PROGRAM

THE STARRETT 16MM SOUND MOVIE

"THE TOOLS AND RULES FOR PRECISION MEASURING"

FEATURING

- Highlights in the history of precision measuring
- New Tools and Instruments just introduced by Starrett
- Precision Measuring from basic rules to latest precision methods
- New, simplified instruction: How to use and read the Micrometer and Vernier.

Tells the story of precision measuring in 30 interest-packed minutes . . . how precision tools control quality in mass production . . . showing the latest methods and equipment in practical use. This outstanding film is a "must" for your training classes.

FOR FREE SHOWINGS TO YOUR GROUP MAIL THIS COUPON TODAY

THE L. S. STARRETT COMPANY
ATHOL, MASSACHUSETTS

Please arrange for our free showing of the Starrett Movie.

Name _____
Title _____
School _____
Address _____

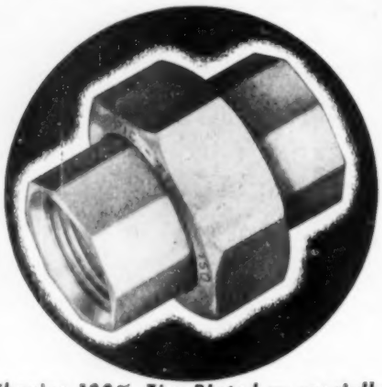
BREVITY—Identify by IEN - 4664 if you write the maker

Ingersoll specializes in STEELS that resist corrosion that resist heat

BW

Ingersoll STEEL DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue, Chicago 4, Illinois
Plant: New Castle, Indiana

BREVITY—Identify by IEN - 4665 if you write the maker



They're 100% Zinc Plated — specially designed for Original Equipment!

PIC STEEL UNIONS

Unusually attractive—strong—this 150# steel union is specially suited to the needs of manufacturers of original equipment. Ends are made of heavy steel pipe coupling stock—uniformly flat sided for fast installation with open-end or pipe wrenches: A special wedge-type bronze seat ensures tightness. Zinc plating — even on threads—gives 100% rust protection. The cost?—less than a galvanized, no more than a black malleable union.

Write for FREE SAMPLES.

DART UNION COMPANY, Providence 5, R. I.

BREVITY—Identify by IEN - 4666 if you write the maker

New speed and savings in wrap-around fastening!

BOSTITCH SELF-FEEDING "HOG-RING" PLIER

Applying the self-feeding principle to the familiar hog ring operation, the Bostitch P-7 stapling plier can greatly speed up many "wrap-around" fastening jobs. Preformed staples with 1/2" openings are fed from a cemented strip and formed into 1/4" rings around wires, cords, seat cover edges, and many other things for which this size hog ring is generally used. Faster work means quicker production with fewer man-hours and at less cost. For complete information, write BOSTITCH, 460 Mechanic Street, Westerly, R. I.

BOSTITCH® fastens it better, AND FASTER with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES
ALL TYPES OF STAPLES APPLIED BY MACHINES

NEWS NOTES—Concluded

"How to use a portable sander"

BREVITY—Identify by IEN - 4667 if you write the maker

SANDING . . Application instructions in new catalog on company's portable pneumatic sander

Sundstrand Machine Tool Co.
Harrison Ave. & 11th St., Rockford, Ill.

Detail instructions are included in new 42-sheet looseleaf "Speed Up" catalog on how to finish wood and metal surfaces with the company's portable pneumatic sanding tools. They cover sanding, rubbing, polishing, equipment selection, abrasives, pads. Maintenance notes are supplied.

BREVITY—Identify by IEN - 4668 if you write the maker

SHATTER PROOFING . . Material for glass again available, protects against flying pieces

Wilbur & Williams Co.
128-32 Lincoln St., Boston 35, Mass.

"Shatterbond" once more is available to coat glass window surfaces with a tough strong film to prevent glass fragments from flying about when a window is broken. It applies by brush or spray in two types, covers 500 sq. ft. per gal., lists at $7.70 per gal. in Zone 1 in 1 to 5-gal. containers.

BREVITY—Identify by IEN - 4669 if you write the maker

TESTING . . Radiation instruments to check for hazards after an atomic explosion

Tracerlab Inc.
128-32 High St., Boston 10, Mass.

"How Safe?" titles new 16-page information booklet on radioactivity, radiation hazards, protection against radiation, personnel training. The booklet provides specifications on instruments to detect and measure radiation in an atomic explosion area and also in food and water.

BREVITY—Identify by IEN - 4670 if you write the maker

TUBES . . Cardboard slide selector of technical data on stainless tube and pipe

Carpenter Steel Co.
131-35 Springfield Road, Union, N. J.

Summary of technical data is presented in quick-selector form by new 11¼ by 4¾-in. "Slide Chart." The face reads analyses, physical and other properties for 17 stainless steels in tube form. The back reads recommended bending and coiling radii for tube from ⅜ to 5 inches. Tables list other data.

BREVITY—Identify by IEN - 4671 if you write the maker

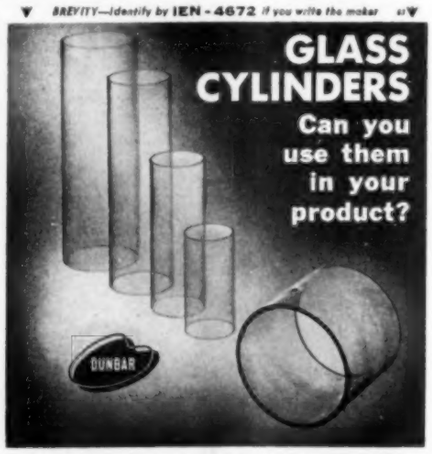
WOOD WORKING . . Circular selector for woodworking and construction information

Greenlee Tool Co.
2134-38 12th St., Rockford, Ill.

"Handy Calculator" is a new cardboard selector 6 in. in diameter with slides front and back. It provides information on nail size and dimensions, wood-screw dimensions and bit sizes, board feet and lumber size, wood characteristics, concrete mixes, paint, tool sharpening. List price 25 cents in coin.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4672 if you write the maker



GLASS CYLINDERS
Can you use them in your product?

For dispensers, merchandise displays, visible hoppers, lighting fixtures, sight feeders, meters, columns or any other applications, DUNBAR offers you a wide variety of cylinder sizes in economical quantities. Or we will fabricate blown glass cylinders to your specifications. We invite your inquiries. Write Dept. 965 for our Glass Cylinder catalogue No. C-51.

Dunbar Glass Corporation
DUNBAR, WEST VIRGINIA
NEW YORK • CHICAGO

BREVITY—Identify by IEN - 4673 if you write the maker

Chem-Board Tote Boxes HELP ARMAMENT PROGRAM

All kinds of materials, parts and sub-assemblies are flowing to production lines efficiently and economically in Convoy Chem-Board Tote Boxes to speed the armament program in plants from coast to coast.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Write today.

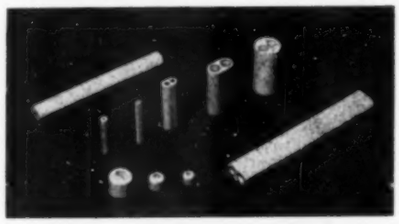
Standard and Custom-made Nesting—Stacking—Vertical CHEM-BOARD TOTE BOXES

CONVOY, INC.
P. O. Station B, Box 216-I
CANTON 6, OHIO

BREVITY—Identify by IEN - 4674 if you write the maker

THERMOCOUPLE WIRE INSULATORS

Immediate Delivery • 200 Stock Sizes



Made from high grade Ceramic Material. Will withstand sudden heating and cooling. Heat shock resistant material. Very hard and wear resistant.

Single hole, double hole round and oval styles. Special sizes to customers' specifications.

Our new plant equipped with modern machinery enables us to maintain High Grade Electrical Properties and close dimensional tolerances.

No order too small or too large.

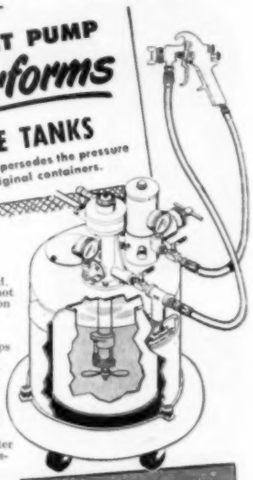
Send us your blue print or specifications.

Du-Co Ceramics Company
Manufacturers of Steatite, Electrical and Refractory Porcelain
Du-Co Building Saxonburg, Pa.

BREVITY—Identify by IEN - 4675 if you write the maker

NEW PAINT PUMP *Out-performs* PRESSURE TANKS

Graco Paintmaster supersedes the pressure tank. Pumps from original containers.



Saves mixing time
Paintmaster's built-in agitator keeps paint mixed. Uses rotary gear pump, not air pressure . . . no aeration of paint.

Saves on down time
Graco's Paintmaster pumps paint right out of original container. No transfers to pressure pots. No shut-downs for refilling. Less clean-up time.

Saves up to 25% paint!
Big paint savings are possible with a Paintmaster because low operating pressure reduces overspray.

Write for free literature. 5-gal. and 55-gal. models available.

GRACO *Paintmaster*

GRAY COMPANY, INC.
51 GRACO SQUARE
Minneapolis, Minn.

OFFICES: NEW YORK • PHILADELPHIA • DETROIT • CHICAGO • SAN FRANCISCO

BREVITY—Identify by IEN - 4676 if you write the maker

QUICK ACTION ON ANY ORDER

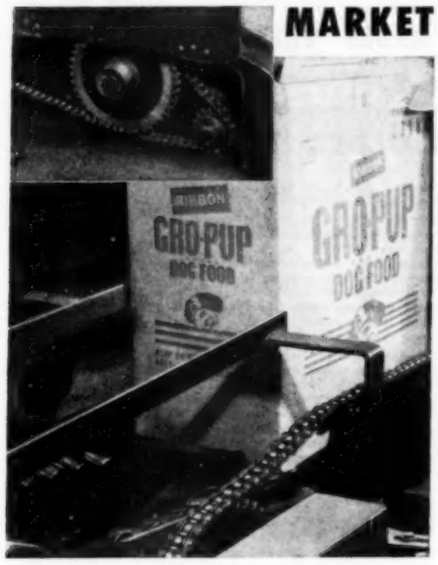
Ex-Cell-O Carries 300,000 Drill Jig Bushings in Stock

In addition to accuracy and long life, you get fast delivery on any order of any size when you specify Ex-Cell-O Drill Jig Bushings. That is because Ex-Cell-O stocks more than 300,000 bushings—one of the largest and most varied supplies in the world. For list of standard styles and sizes quickly available, write today for your free copy of Ex-Cell-O Bulletin 35371.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

BREVITY—Identify by IEN - 4677 if you write the maker

SPEEDING GRO-PUP TO MARKET



with DIAMOND Roller CHAINS

● For the driving of machinery from motors to main drive shafts—from shafts to shafts—or as important members of conveying and packaging equipment, Diamond Roller Chains serve in plants throughout the land . . . Rolling at every point of contact, they operate with frictionless ease, transfer power without slip at 98-99% efficiency for years of useful life.

Catalog 709 includes complete data on Stock Sprockets and Roller Chains. Copy mailed on request.

Diamond, the No. 1 Roller Chain since 1890, provides the reliability so important in the present day race to speed output and hold maintenance and operating costs down. Catalog 709 containing 48 pages of valuable data is yours for the asking.

DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Ave., Indianapolis 7, Ind.
Offices and Distributors in All Principal Cities
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER

DIAMOND ROLLER CHAINS

BREVITY—Identify by IEN - 4679 if you write the maker

SHEARING . . Steel frame machine rates 20 ft. of ½ in. mild steel

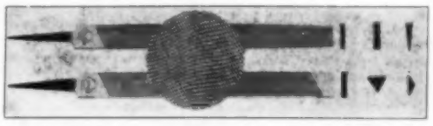
Source: CINCINNATI SHAPER CO.
Hopple, Elam & Garrard Sts., Cincinnati 25, Ohio

New 20-ft. shear weighs 135,000 lb., operates at 20 strokes per minute. It is equipped with hydraulic hold-downs rating 70 ton. The hold-down pistons are equipped with rings rather than packing and with a vacuum-pump connection that prevents leakage of hydraulic oil. Throat dimension measures 24 in. and back-gage range is to 48 inches. Equipment includes tool-steel blades with four cutting edges, a ball-bearing back gage with graduated dial, automatic lubrication and the required guards.

BREVITY—Identify by IEN - 4680 if you write the maker

FILING . . Double cut files now made with Bite-Rite tooth design

Source: HENRY DISSTON & SONS INC.
49 Tacony St., Philadelphia 35, Pa.



Bite-Rite trade names a staggered tooth design of file with round non-clogging gullets which the company developed some years ago, previously described IEN-1983-37. This design has now been extended to the company's entire line of double-cut files, including the brands known as Gold Medal, Disston and Fast-Cut, on the market for some time.

BREVITY—Identify by IEN - 4681 if you write the maker

DRIVE . . Spur and steel miter gears, teeth are cut on 20 deg. pressure angle

Source: BOSTON GEAR WORKS
63 Hayward St., Quincy 71, Mass.

The company announces addition to its standard stock of a line of spur gears and steel miter gears with teeth cut on a 20-deg. pressure angle instead of the usual 14½ degrees. The 20-deg. units feature a wide tooth base, long contact surface, large tooth bearing surface and smooth rolling action. Undercutting is minimized. Average increase in hp. rating per pound of gear is about 20 percent for the 20-deg. design as compared to the 14½ degrees. Available sizes and specifications are included in the company's catalog No. 55.

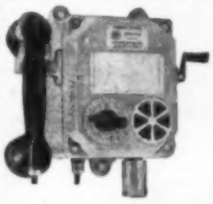
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4682 if you write the maker

U.S.I. SOUND POWERED

assures dependable communication

SAVE TIME... DON'T WALK... TALK!



Become familiar with the advantages of the U.S.I. Sound Powered telephones and systems for industrial communication.

Write for catalog. Dept. L

CUT COSTS . . . INCREASE EFFICIENCY

UNITED STATES INSTRUMENT CORPORATION
SUMMIT • • • NEW JERSEY

BREVITY—Identify by IEN - 4683 if you write the maker

NEW! SOUTH BEND 7" SHAPER

Regular equipment includes power feeds, swivel tool head graduated 90° right and left, vise, light fixture, switches, drive unit and belt guards, as illustrated.

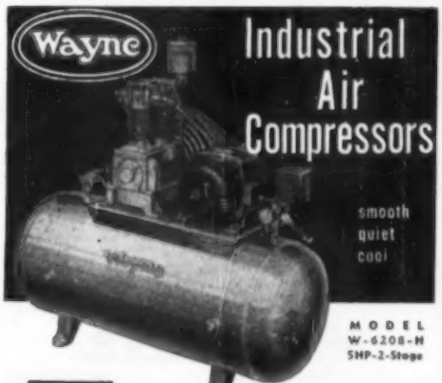
This NEW 7" Precision Bench Shaper is an accurate and rugged machine tool. It is economical to operate and is readily adaptable to a wide variety of toolroom, production and maintenance work. Designed for exacting industrial use, this 7" shaper is ideal for machining small parts in any type of shop.

For information on 7" Bench Shapers; 14" Drill Presses; Lathes with 9", 10", 13", 14½", 16", and 16-24" swings; 1/2" and 1" collet Turret Lathes; write to—

SOUTH BEND LATHE
SOUTH BEND, INDIANA
BUILDING BETTER TOOLS SINCE 1906

BREVITY—Identify by IEN - 4684 if you write the maker

Wayne Industrial Air Compressors



send for CATALOG

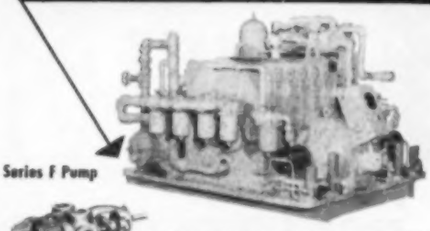
INCREASE PRODUCTION with air
If your present source of air is overloaded install small units in each department needing air. Supplies air at higher pressures or saves running large machine when the department works overtime. Completely packaged units of power . . . Wayne Compressors are available from ⅓ H.P. to 10 H.P. Ask for catalog.

INDUSTRIAL LIFTS • HOSE REELS

THE WAYNE PUMP COMPANY
FORT WAYNE 4, INDIANA • TORONTO, CANADA

BREVITY—Identify by IEN - 4685 if you write the maker

ANOTHER EXAMPLE OF ROPER DEPENDABILITY IN HYDRAULIC APPLICATIONS



Series F Pump

ROPER PUMP QUICKLY CHARGES THE CIRCUIT IN THIS SECO UNIT

This Seco Fluid Power Package has all the essential components for automatic high-low hydraulic press operation. A fast-acting Roper Series "F" Pump is used as the low pressure generator; it supplies power to the circuit which closes the daylight opening of the press ram. Because the Roper Pump and a Seco pump operate intermittently, it is possible for the unit to operate two or more presses alternately.

Roper Series "F" Pumps operate with pressures to 300 P.S.I. — Capacities 1 to 300 G.P.M.

ROPER Rotary Pumps

Send for Free Booklet

GEO. D. ROPER CORPORATION
205 Blackhawk Park Ave., Rockford, Ill.

BREVITY—Identify by IEN - 4686 if you write the maker

QUICKLY BEND PIPE OR CONDUIT EXACTLY AS YOU NEED IT!

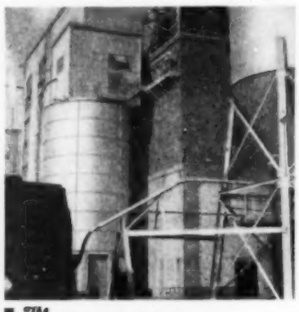
Make tailor-made bends *right on the job* with a GREENLEE Hydraulic Pipe Bender. One-man operated . . . in but a few minutes produces smooth, accurate bends in pipe up to 5", rigid and thin-wall conduit, tubing. Compact, easy to set up and operate. Great time-saver for making piping and electrical installations either on machines being produced or for your plant maintenance and construction.

GREENLEE

WRITE FOR FACTS, get complete information on this and other GREENLEE time-saving tools. Greenlee Tool Co., 1865 Herbert Avenue, Rockford, Illinois

BREVITY—Identify by IEN - 4687 if you write the maker

KEEP UNLOADING AND STORAGE COSTS DOWN



with The AIRVEYOR

This pneumatic conveyor offers many concrete savings for conveying dry pulverized, crushed, and granular materials. Reduced purchase price in bulk . . . cost of unloading and storing. Clean, dustless operation, rapid unloading, convenience in storing and reclaiming are just a few of the advantages of this pneumatic conveyor.

If you have a bulk materials-handling problem, may we suggest you allow us to make a study of your conditions. We will be glad to submit our recommendations, based solely on your particular requirements. No obligation, of course. Write for literature on the Airveyor.

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg. A-116

Fuller DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

BREVITY—Identify by IEN - 4688 if you write the maker

CONTINENTAL FENCE

MADE OF KONIK STEEL

Peace-of-Mind PROPERTY PROTECTION

Enjoy the peace-of-mind protection you get with Continental fence . . . the only fence made of KONIK steel. KONIK is an open hearth alloy steel with copper, nickel, and chromium added for extra strength and extra resistance to rust and corrosion. Write Continental or see our nearest representative for complete information on Continental fence.

*Due to present National Defense requirements for nickel and chromium, two critical war materials, Continental fence will not be available in "Konik" steel for the duration of this emergency.

*Trade Marks Reg. U.S. Pat. Off.

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana

Please send FREE copy of "Planned Protection"—complete manual on property protection.

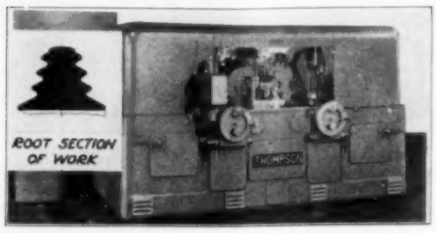
Name
Address
City State

CONTINENTAL STEEL **CONTINENTAL STEEL CORPORATION**

BREVITY—Identify by IEN - 4689 if you write the maker

GRINDING . . Opposed wheel machine for root sections of turbine buckets

Source: THOMPSON GRINDER CO.
1532-36 W. Main St., Springfield, Ohio



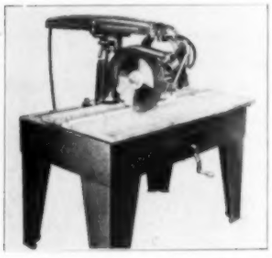
Steel forgings for gas-turbine buckets are individually mounted in working-holding blocks for insertion by the operator between two opposed wheels in this new Truforming machine. The wheels approach each other on opposite sides of the "Pine Tree" root section of the bucket which measures about 2 in. in length. Total stock removal is .150 in. on each side from rough forging to finished dimensions. Either of two cycles can be set up, one to rough grind leaving .005 in. for final finish, the other to grind all of the way to finished dimension. Production rate is about 30 buckets per hour.

Grinding wheels are kept at correct form by application of a crusher roll and this roll is reground after it has been applied a given number of times. Included in the automatic operating cycle is opening and closing of the hood doors on the machine, operation of the work clamp, start and stop for coolant flow, infeed, dwell and retraction for the two wheels. The crushing operation is handled separately.

BREVITY—Identify by IEN - 4690 if you write the maker

WOOD WORKING . . Radial machine for sawing, shaping, routing, dadoing

Source: DEWALT INC.
63 Fountain Ave., Dept. P-68, Lancaster, Pa.



Model R2 is a new machine in the company's line of radial-arm equipment in which the ball-bearing slides on ways at the top of the adjustable machine column. The motor - driven head is trunnioned at the outer end. Two sizes employ 3 to 5-hp. motors and take 12 and 14-in. circular blades. The motor is available in a totally-enclosed ac. design or in a protected-enclosure universal unit.

The motor design is similar to that previously described IEN-12397-50 in which a portion of the circular housing is flat to provide clearance for the cut. A 14-in. blade will cut square to 4½ inches.

Standard construction includes a table with a wood top, the supporting arm, carriage, yoke, motor, switch and safety guard. The table is steel-channel design and measures 28 by 44 inches. A 36 by 48-in. table can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4691 if you write the maker

REDUCE MATERIAL AND PRODUCTION COSTS 2 WAYS!

ONE WAY—Use inexpensive, easy-to-apply *Gripco Lock Nuts* to speed up production and keep bolted parts tight. They're easy to apply. Start on the bolt just like a common nut. When the "double triangle" threads contact the bolt threads, a wrench seats the nut and locks it securely.

Gripco Lock Nuts defy vibration; are unaffected by oil, water or chemicals. They can be removed with a wrench and re-applied many times without appreciable loss of holding power. Lock wherever they stop. Made to fit National fine or National coarse thread bolts. *Available in brass as well as steel.*

ANOTHER WAY—Use inexpensive *Gripco Pilot-Projection Weld Nuts.* Fast Application—raised Pilot centers nut over the hole instantly, accurately, for quick welding at exactly the right location. *Gripco Weld Nuts* are available with common threads or with Gripco Lock threads, and with two Pilot heights to fit different thicknesses of metal.

Ask for samples or send a trial order. Specify sizes and type of thread.

GRIP NUT COMPANY
310-S SO. MICHIGAN AVE., CHICAGO 4, ILL.

BREVITY—Identify by IEN - 4692 if you write the maker

Mullenbach Industrial Resistors

Open bank

Enclosed bank

High Load Capacity— 500 Volt Rating AC or DC

Ideal resistor for motor controls, load banks, ballasts, etc. Open-wound resistor insures excellent air circulation and high heat dissipation.

Corrosion-resistant alloy wire triply insulated from frame and supported on high-strength porcelain insulators. Retains constant resistance at all temperatures. Silver brazed terminal connections. One-piece cadmium-plated steel frame operates at ground potential. Available in single units from ¼ ohm at 60 amps. to 20 ohms at 5 amps., or in series and parallel combinations to meet load requirements. Underwriters Lab. Approval.

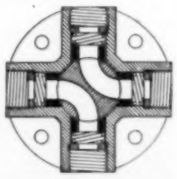
QUICK DELIVERY!

Free folder describes complete electrical and mechanical specifications and quotes prices. Write for copy.

Electrical MULLENBACH MANUFACTURING COMPANY
2300 EAST 27th STREET LOS ANGELES 58, CALIFORNIA

BREVITY—Identify by IEN - 4693 if you write the maker

New "ARDEE" VALVES



HAVE

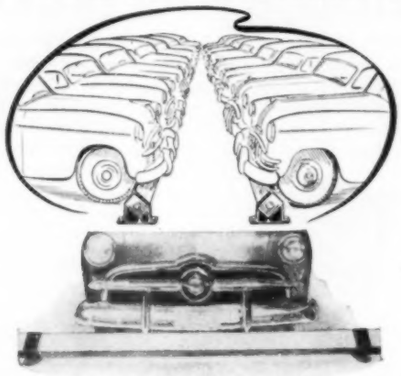
MOLDED TUBULAR SEALS

These new inexpensive manual 4-way valves control 150 psi air pressure, and handle liquid pressures up to 200 psi. Available in pipe sizes from ¼" to ¾". A tubular sealing member slides over the cylindrical surface of the rotor, maintaining intimate contact during operation of the valve. Pipe scale and foreign material in the line cannot lodge between the sealing surfaces, due to the wiping action of the sliding seal.

Valve bodies, depending on service, are furnished in aluminum or brass, and the tubular sealing members are molded of various resilient materials suitable to the service requirements. The controlled degree of softness assures a tight seal against the curvature of the mating surface. There is minimum pressure loss through the valve because the direct, circular section flow passages are unobstructed and of approximately the same diameter as the nominal pipe size. The non-interflow characteristic of the ARDEE valves is important for operations where variable throttling is desirable.

BARKSDALE
1566 EAST SLAUSON AVENUE, LOS ANGELES 11, CALIFORNIA

BREVITY—Identify by IEN - 4694 if you write the maker



SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground—no drainage problem.
4. Barrier is above ground—no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed—just line up and drive the anchor pins.
8. Easily moved—just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface—black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire—no shock.

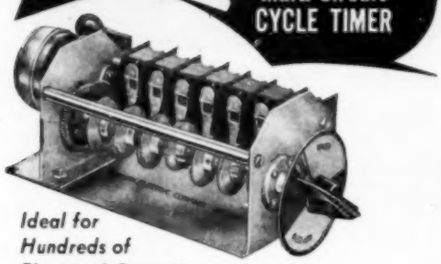
Send us a plot plan of your parking lot—we do the engineering free.

Harris-Barrier, Inc. 5407 N. PENNSYLVANIA STREET, INDIANAPOLIS 5 • INDIANA

BREVITY—Identify by IEN - 4695 if you write the maker

For Immediate Delivery....

The NEW **ZENITH** Multi-Circuit CYCLE TIMER



Ideal for Hundreds of Electrical Operations

Specially designed to accurately time any operation—for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning machinery. The Multi-Circuit Cycle Timer and other Zenith units will also solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For information on volts, cycles and circuits as well as prices—send for illustrated Bulletin No. 142.

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

BREVITY—Identify by IEN - 4696 if you write the maker

No Testing Problem is "too special" for the

Dillon UNIVERSAL TESTER

Special versions of the Dillon Tester can be furnished to handle virtually any size, shape or type of material.

A typical application of the Dillon Universal Tester used to pull projectile from case to determine effectiveness of crimp.

Pictured here is just one of the hundreds of problems handled by inexpensive Dillon Testers. Not only do they check every conceivable *type* of material, but also both standard and *special* shapes. Interchangeable fixtures permit tensile, compression, transverse and shear tests. Capacities range from 0-250 to 0-10,000 lbs. Motorized or hand-operated.

With a Dillon Tester, any average employee can handle all your testing problems after just a few minutes' instruction . . . right in your own shop. Consult us for the practical solution to YOUR testing problems.

★ *WRITE FOR ILLUSTRATED BULLETIN* . . . . . .

W. C. DILLON & CO., INC.
PRECISION INSTRUMENTS FOR PRECISION TESTING
1421-K SOUTH CIRCLE AVENUE, FOREST PARK, ILLINOIS

BREVITY—Identify by IEN - 4698 if you write the maker

STROBOSCOPE . . Flashing light "stops" motion at synchronous speed

Source: SYNCHROSCOPE CO.
57 William St., Room 1013, New York 5, N. Y.

Synchroscope is a new assembly of cold-cathode triode tube assembled in a flashlight type of housing with a lens at one end and a circuit-closing button at the other. The unit connects to an ac. power source through its extension cord and standard plug.

Depressing the button switch results in light flashes at the same rate as the alternations in the ac. circuit. This is due to the fact that the tube produces a pulse of light only during the positive portion of the ac. cycle. The result, when this pulsing light is directed at a rotating object, is to "stop" the rotation if the speed is in synchronism with the pulse. List price is $18.75.

BREVITY—Identify by IEN - 4699 if you write the maker

CLEANING . . Liquid concentrate for metal products in a dip tank

Source: MAGNUS CHEMICAL CO.
1951 South Ave., Garwood, N. J.

Also suited to spray the work

Magnusol is a new emulsion-type cleaning material supplied in concentrated form to be mixed with safety solvent. It is employed in a tank into which metal products are dipped to remove smut, drawing compound, chalk marks. The material is non-inflammable at work temperature. Parts that have been dipped are removed from the solution, allowed to drain and then are rinsed with a water spray.

Emulso-Clean process designates the operation employing the new material. It is safe to use on any metal and is suited particularly for steel since it leaves a slight trace of solvent that provides temporary corrosion protection.

BREVITY—Identify by IEN - 4700 if you write the maker

ENGINE . . Four cycle diesel, 550 to 1320 hp., runs on oil or gas

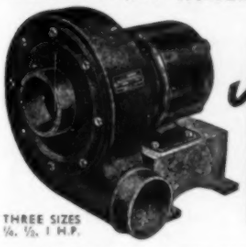
Source: WORTHINGTON PUMP & MACHINERY CORP.
423 Worthington Ave., Harrison, N. J.

Type DR is a new line of four-cycle direct-injection totally-enclosed diesel engines in 5 to 8-cylinder assemblies with 13¼-in. bore and 17½-in. stroke. Rating is 550 to 880 hp. at 450 rpm. under atmospheric conditions and 825 to 1,320 hp. when a supercharger is added. The engine is suited particularly for continuous heavy-duty operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4701 if you write the maker

READY TO RUN—IMMEDIATE DELIVERY!



THREE SIZES ⅛, ⅙, 1 H.P.

Sutton MOTOR DRIVEN PRESSURE BLOWERS

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY

CENTRIFUGAL TYPE designed to deliver an even, non-pulsating flow of air for blowing or exhausting. Universal as to rotation and discharge. Direction of discharge may be changed to any of eight 45 degree positions. • Housing, base, supported, and impeller are constructed of cast aluminum alloy to reduce weight and increase strength. Straight wall construction reduces windage and increase efficiency. • Powered by standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor in choice of open or totally enclosed types. Three sizes: ¼, ½ and 1 H.P. with capacities from 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

USED FOR removing dust from grinding, buffing, and polishing equipment; for conveying cotton, wool, saw dust, shavings, etc.; for exhausting smoke, fumes and vapor; to furnish blast for forges, furnaces, etc., and for cooling and drying purposes.

WRITE FOR LITERATURE AND PRICES

Sutton *Manufacturing Corp.*
112 W. WILSON AVENUE NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 4702 if you write the maker

OTC ANNOUNCES

SENSATIONAL POWER-TWIN HYDRAULIC PULLER WITH CENTER HOLE

REVOLUTIONARY ADDITION TO THE FAMOUS OTC PULLING SYSTEM

- Fits all OTC pulling units
- Works in any position
- Pushes—Pulls
- Faster than screw operation
- Eliminates torque
- More powerful—No friction
- Easier—just pump strokes
- Safer—remote control

CENTER HOLE permits Power-Twin to do jobs no other hydraulic ram can do . . . makes possible application of direct force . . . fast, easy, unlimited adjustment . . . versatile interchange of parts.

LIGHT — COMPACT — POWERFUL — SAFE

The fastest, easiest working, handiest Push-Puller in history . . . sensational in performance, its time and labor saving ability and low cost make it a must for any shop. See your jobber for complete information or write us.

Spline shaft bearing comes off quickly with Power-Twin and OTC Push-Puller and 932-attachment

No problem to remove drive gear with OTC Power-Twin and 1001A Grip-O-Matic

OWATONNA TOOL COMPANY
371 CEDAR STREET • OWATONNA, MINNESOTA

BREVITY—Identify by IEN - 4703 if you write the maker

HYDRAULIC smoothness in a positive MECHANICAL drive

Cone-Drive DOUBLE-ENVELOPING gears give you this "hydraulic" smoothness because:

1. Regardless of the number of teeth in the gear, a full ⅛ of the teeth are **simultaneously** in contact.
2. **Every tooth** remains in **continuous** contact while engaged.
3. **Velocity is constant.**

Ask us to tell you more about them

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Division Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

BREVITY—Identify by IEN - 4704 if you write the maker

HERE'S YOUR ***Complete*** STEAM PLANT

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability • 17 sizes from 20 to 500 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details write for catalog 317.

Superior STEAM GENERATORS

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Executive Offices: Times Building, Times Square, New York 18, N. Y.

BREVITY—Identify by IEN - 4705 if you write the maker

$10,440 saved per yr. by 2 DUMORE DRILL HEADS

This $10,000 saving is "gravy" say tool engineers of F. C. Russell Company, makers of Thermoseal combination windows. "The saving in drills alone in the first 13 months use of these two Dumore units repays their entire cost!"

If your plant uses small drills (No. 80-1/8") you should investigate these amazing economies. Write for bulletin and report on production savings.

Write today for free CATALOG!

The DUMORE Company
Dept. E-47 RACINE, WISCONSIN
Export Address: 11 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 4706 if you write the maker

UNCLE SAM needs YOU

Model 218

Don't let Uncle Sam down with a maintenance *let-down*. Your first step in getting defense orders is a clean plant.
Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Michigan

BREVITY—Identify by IEN - 4707 if you write the maker

ELECTRIC COUNTERS LARGE or SMALL

Standard of Dependability for 25 Years

Standard, Panel Mounting and *Dustproof* Types.
For *built-in* applications, *photo-electric, remote,* and *centralized production* counting.
Almost *any* voltage, AC or DC.

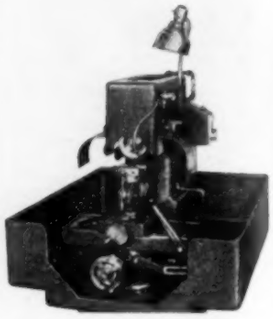
PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.
Send catalog of Wizard Electric and Photo-Electric Counter applications.

Company _____
Name _____ Title _____
Street _____ City _____ Zone ____ State _____
W-14

BREVITY—Identify by IEN - 4708 if you write the maker

GRINDING . . Sharpening machine for carbide cutting edges, chip breaker

Source: HAMMOND MACHINERY BUILDERS INC. 1607 Douglas Ave., Kalamazoo, Mich.



Model CB-77W is a new pump-equipped grinding machine to sharpen carbide cutting tools of single-point design and also to grind chip-breaker grooves. A companion machine known as Model CB-77 omits the pump and provides a drip feed tank with a wick and tube to supply coolant to the wheels in limited amount. Both machines mount diamond cup wheels measuring 6 or 7 in. in diameter on one side of the ball-bearing spindle and chip-breaker wheels measuring 4 to 6 in. in diameter on the opposite side. The spindle is driven at 3,500 rpm. by V-belt connection to a motor in the base with reversing control.

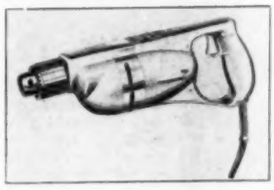
The cup-wheel side mounts a table measuring 8 by 14 in. with provision to tilt between 25 deg. above and 30 deg. below horizontal after unlocking a lever. The table assembly is moved in and out from the wheel by a feed screw. It is equipped with a compound gage that slides in a slot parallel to the wheel. A cross slide is provided to move the gage face toward the wheel.

The chip breaker side mounts a universal vise or the company's Model-VC grinding fixture for solid carbide inserts. Movement includes 5½ in. to traverse in and out from the wheel by means of a handwheel with a dial graduated in .001-in. divisions. It provides 3¾ in. of maximum movement and reciprocation underneath the wheel on ball-bearing ways through an 8-in. maximum stroke. Distance from the bottom of the vise jaws to center of spindle measures 5½ inches.

BREVITY—Identify by IEN - 4709 if you write the maker

DRILLING . . Portable electric tool, 5/16 and 3/8 in. capacities in steel

Source: CUMMINS PORTABLE TOOLS DIVISION 4738-42 N. Ravenswood Ave., Chicago 40, Ill.



Two new sizes, Model 430 and Model 435, have been added to the company's standard line of portable electric drills. Free speeds are 1,000 and 750 rpm. Each is equipped with a Jacobs geared chuck. Overall lengths are 12¾ and 13¾ inches. Weight is 6½ lb. in both cases.

Drive is by a universal motor for operation on 110-volt input, 220 volts when specified. Shafts are mounted on ball or roller bearings. Gears are made of steel and are hardened. Control centers at a two-pole momentary-contact switch. Assembly is in a die-cast aluminum housing. A 10-ft. three-conductor cord with a rubber plug is standard equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 4710 if you write the maker

STANDARDIZE WITH OHIO

In these days of "speed-up" production, high maintenance cost and competitive government contracts, the wise engineer turns to Ohio STOCK gears and speed reducers for specifications.
Ohio STOCK gears and reducers save valuable production time and eliminate "extra-cost-specials". Quantity runs produce lower cost.
Check these facts and get in touch with your nearest distributor; he's trained to engineer your problems.

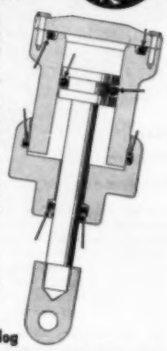
ESTABLISHED 1915
THE OHIO GEAR COMPANY
3345 EAST 179th STREET • CLEVELAND 10, OHIO

OHIO GEARS

BREVITY—Identify by IEN - 4711 if you write the maker

O-RINGS by INJECTION MOLDING

Dependable Hydraulic Seals



Minnesota O-Rings function in air or gas systems as well as in hydraulic systems. Air cylinders . . . hydraulic valves . . . hoisting mechanisms . . . water pumps . . . bottling machines . . . refrigerators . . . motors . . . lubricators . . . are a few of their uses. Minnesota's exclusive injection process makes possible very close dimensions, uniformity in mass production and downright economy. We use special compounds of synthetic rubber to meet your exact requirements. Let us quote on your next hydraulic packing installation.

Manufacturers of all types of small rubber parts

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MINNESOTA RUBBER & GASKET CO.
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BREVITY—Identify by IEN - 4712 if you write the maker

Protect As You Project
Delicate Precision Parts

PACKAGE in

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Plastic Selling Containers

Drills and tools, industrial jewels, taps and dies, screws, springs, nozzles, valves, fine machine parts, fishing tackle, electrical parts, and many, many others can be packaged for perfect visibility and the utmost in protection in the container that's featherlight (1/4 the weight of glass) • shatterproof • flexible or rigid • permanently printed • clear or opaque in all colors • eventually a re-use container.

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AMERICA'S #1 SOURCE FOR PLASTIC CONTAINERS
ESTABLISHED 1919

▼ BREVITY—Identify by IEN - 4714 if you write the maker ▼

YOUR PRODUCTS ARE "LOST IN A BIG CITY"

UNLESS YOU PROPERLY MARK THEM

"ACROMARK" SIMPLE BUT HIGH-PRODUCTION EFFICIENT MARKING MACHINES ARE THE ANSWER.

THE ONE ON THE RIGHT MARKS 12 FERRULES AT A SINGLE STROKE.

THE ONE BELOW MARKS (FILLS-IN) THE DATA ON NAME-PLATES, ALL ALIKE, AT 15 TO 30 PER MINUTE.

OTHER ACROMARK PRODUCTS ARE

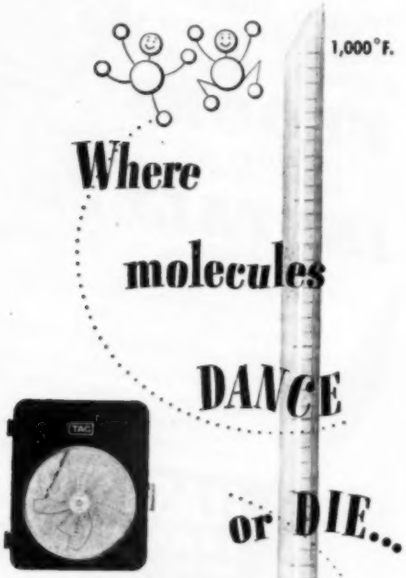
Marking and Numbering Machines, Stamps, Dies, Type, Name-Plates, Metal Signs, Engraving, Burning Brands, Marking Inks, and Special Machines for All Kinds of Marking.

The ACROMARK Company

7 MORRELL STREET
ELIZABETH 4, N. J.

Send a sample or drawing of the product you wish to mark for quotation—no obligation.

▼ BREVITY—Identify by IEN - 4715 if you write the maker ▼



Where molecules DANCE or DIE...

TAGLIABUE RECORDERS Chart Changing Temperatures

From the mad molecular dance at a thousand degrees to the killing cold of three hundred below, TAGliabue Recorders faithfully chart changing temperatures for future reference. Whether your requirements are for a sensitive instrument spanning but a few degrees ...for a model built for one temperature extreme or the other...or for a conventional instrument that's adaptable to myriad industrial applications--you will find a TAG Temperature Recorder that meets your every need.

And in all TAG Recorders you can count on the same simple, sound design ...the same sturdy construction...that have long kept TAGliabue leaders in temperature instrumentation.

Feel free to call on your TAG Representative for assistance in applying these modern instruments to your processes.

TAGLIABUE INSTRUMENTS DIVISION
Weston Electrical Instrument Corporation
614 Frelinghuysen Avenue, Newark 5, New Jersey

▼ BREVITY—Identify by IEN - 4717 if you write the maker ▼

TUBE . . Radial fin design to handle two heat exchange fluids

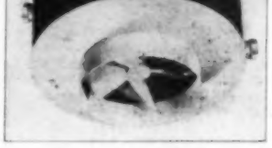
Source: MODINE MFG. CO.
1724 Racine St., Racine, Wis.

Type CRF designates new radial-fin assembly of two concentric tubes measuring respectively 1 and 1⅜ in. in diameter. Central and surrounding passages are provided for flow of two fluids for heat-exchange purposes. Fins and tubes are fusion bonded. End fittings are available for connections to both passes. Assembly can be in copper, nickel, stainless steel, carbon steel, or other metals as specified, in lengths to 20 feet. The company is prepared to supply the unit in production-lot quantities to meet individual requirements.

▼ BREVITY—Identify by IEN - 4718 if you write the maker ▼

HEATING . . Vertical space unit, capacities from 21,700 to 492,000 btu.

Source: C. A. DUNHAM CO.
402 W. Madison St., Chicago 6, Ill.



Air is drawn in radially through a vane-equipped circular coil in this new vertical-discharge unit heater. The centrally-located motor-driven fan directs the air downward through the bottom circular opening. Three types of diffusers are available to direct the air as required from heights between 9 and 32 ft. above the floor line.

▼ BREVITY—Identify by IEN - 4719 if you write the maker ▼

STRAPPING . . Coil band dispenser holds and positions coils and cuts off

Source: A. J. GERRARD & CO.
1948-52 N. Hawthorne Ave., Melrose Park, Ill.

A coil of ⅝ to 1¼-in. steel strapping is rolled into position on supporting rollers in this new motor-driven dispenser and the outer edge of the coil is threaded through a cutting guide at the front of the unit. The motor circuit is closed to rotate the coil for delivery of a desired length of the strapping and a lever-operated blade is used to cut the length off. The motor connects to a 110-volt 60-cycle ac. power source.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 19

▼ BREVITY—Identify by IEN - 4720 if you write the maker ▼

▼ BREVITY—Identify by IEN - 4721 if you write the maker ▼

COMPLETE EASE OF OPERATION in a controller

Any control action easily reproduced.

The Bristol Series 500 Air-Operated Controller permits you to do it by *merely setting a dial!*

This saves hours of shutdown.

Easiest to service, too. Simple design, fewest parts, close-tolerance manufacturing—make the instrument interchangeable throughout. One simple adjustment puts it back in exact calibration after complete disassembly and reassembly.

Five types for controlling temperature, flow, pressure, liquid level, humidity, pH. Write for Bulletin 120. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

▼ BREVITY—Identify by IEN - 4722 if you write the maker ▼

▼ BREVITY—Identify by IEN - 4723 if you write the maker ▼

A fast, efficient 10-lb. indirect arc furnace

for small melts of bronze, iron, or steel

The type NS, 10 KW, 10 lb. Detroit Electric Furnace provides a unit which melts on short notice, melts speedily, and with excellent control of analysis and characteristics. A 6 pound heat of bronze melts in 6 minutes; an equal heat of alloy steel in 12 to 15 minutes. For research, experimental work, and small production, the NS furnace delivers high efficiency and simple, economical operation.

Write for complete information.

FEMA

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL — Equipamentos Industriais "Eiso" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castelal Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cason, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F.

BREVITY—Identify by IEN - 4724 if you write the maker

Symbol GRIGOLEIT OF QUALITY AND ECONOMY IN MOLDED PLASTICS

BRUSH HOLDER CAP
Screw-top caps to secure brush spring in motor.

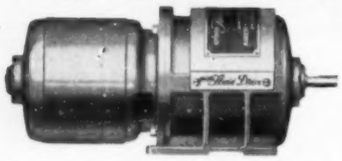
SHIPPING CLOSURES
Protects threads from dirt and damage. Made to order in various sizes.

Your Key to Sales Success is molded plastics by Grigoleit . . . the symbol of quality and economy. A complete line of Pulls, Knobs, Pendants and threaded specialties ready for prompt delivery. Write for your copy of the full illustrated catalog today.

THE GRIGOLEIT COMPANY
"Over Twenty years in Plastics"
641 E. NORTH ST. DECATUR, ILLINOIS

BREVITY—Identify by IEN - 4725 if you write the maker

Act now on this
FREE TRIAL OFFER



Learn about Gýrol Fluid Drives *firsthand*.

We invite you to try American Blower Type TM Gýrol Fluid Drive in actual production right in your own shop, at our expense.

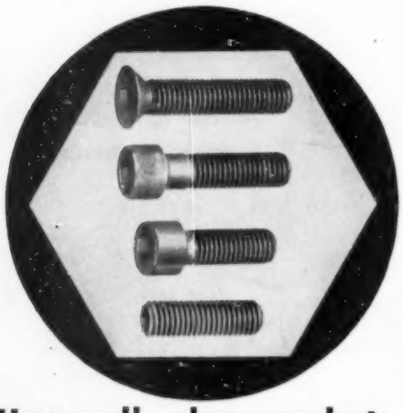
See for yourself how these remarkable units save power, provide smooth acceleration, provide overload protection, and absorb shocks.

To take advantage of this offer, write us direct. Describe the machine on which you want to use the TM unit and give horsepower of present motor. Then, we'll contact you to arrange installation and trial period.

AMERICAN BLOWER
American Blower Corporation, Detroit 32, Michigan
Division of American Radiator & Standard Sanitary Corporation

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER
CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

BREVITY—Identify by IEN - 4726 if you write the maker



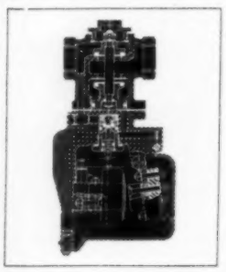
Unusually clean sockets
in double-extrusion-produced
Cleveland Socket Screws
Write for samples and prices

CLEVELAND Top Quality FASTENERS
THE CLEVELAND CAP SCREW COMPANY
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
Warehouses: Chicago Philadelphia New York Providence
Ask your Jobber for Cleveland Fasteners

BREVITY—Identify by IEN - 4727 if you write the maker

VALVE . . Solenoid operated pneumatic rates 40 to 125 lb., ¼ to 1¼ in.

Source: ROSS OPERATING VALVE CO.
118-22 E. Golden Gate Ave., Detroit 3, Mich.



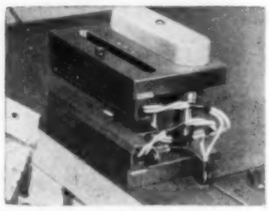
Air enters this new valve from the left as it is shown in the illustration to fill the space above the pressure seat near the top and also the passage leading down to above the ball-type pilot located at about the center of the body. When the circuit is closed to the solenoid at the bottom of the assembly, the clapper-type armature moves to the left and raises a lever that lifts the pilot ball from its seat. Air then can flow through the pilot and upward to the ring-sealed piston beneath the flow port. This piston moves upward to close the exhaust port and open the pressure port for air flow through the valve. Opening the solenoid circuit closes the pilot and permits the valve to close by gravity. The term "safety valve" applied to the new design is based upon this gravity action which requires no spring and assures return to starting position in the event of failure in either the electric circuit or the air pressure.

Six sizes in the line have ¼ to 1¼-in. ports including the exhaust. Solenoid is designed to operate on 110-volt 60-cycle ac. with 4.3-amp. inrush and .56-amp. holding current. Face-to-face dimension between body openings on in-line ports is about 2¾ to 6¼ in. overall height 8⅞ to 13 inches.

BREVITY—Identify by IEN - 4728 if you write the maker

PACKAGING . . Heat sealing machine for thermoplastic bags, also punches

Source: SANDMANN ENGINEERING CO.
2529-33 E. 73rd St., Chicago 49, Ill.



Serrated jaws in this new table-mounted machine are hardened and equipped with electric heating elements and a control thermostat. The upper jaw is mounted to move down for application of pressure on the lower one by foot operation or by air in a power cylinder with suitable valve control.

The operator inserts a filled thermoplastic bag between the jaws to seal a seam across the opening. A punch and die mounted centrally in the jaws punches a hole through the seam at the same time. Operating capacity is about 1,100 bags per hour. The company will advise on application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4729 if you write the maker

RAYTHEON
fractional hp
MOTORS
CONCENTRATED POWER

"Count on Raytheon to run it." That's what design engineers are saying. They're the men who appreciate the Creative Craftsmanship that goes into Raytheon fractional hp motors. When you want to run things, FANS, BLOWERS, HEATING EQUIPMENT, appliances or what have you—count on Raytheon motors to do the job.

TYPE 330-U 4-pole Motor for Horizontal or Shaft-up applications from 1/200 hp to 1/25 hp. at 1500 rpm. Produced to your specifications for refrigeration and air conditioning applications and all air-moving devices. Write for Bulletin 3000.

RUSSELL ELECTRIC COMPANY
Subsidiary of Raytheon Manufacturing Co.
4501 S. Western Blvd. • Dept. E-32 • Chicago 9, Ill.

BREVITY—Identify by IEN - 4730 if you write the maker

HINGED PLATEGRIP
BELT FASTENER No. 500

For Heavy Conveyor Belts of Changing Length

These heavy-duty belt fasteners make a strong, flexible joint in conveyor belts, belts of any width and of from ⅜" to ½" thickness. They offer special advantages in mines, quarries or industrial setups where length or position of belt is frequently changed, because sections can be removed or added at will. Joints are opened for this purpose by simply pulling out the hinge pin.

Easily and quickly applied on the job or in the shop. Special design gives deep compression into belting and smooth, flush joint.

Write for Circular.

ARMSTRONG-BRAY & CO.
5380 NORTHWEST HIGHWAY CHICAGO 30

BREVITY—Identify by IEN - 4731 if you write the maker

FOR QUICK, PERMANENT INSTALLATIONS—ORDER FLASH-STONE INDUSTRIAL
FLOORS
Materials only or completely laid by highly skilled Flash-Stone crews and supervision.
INSTALLED
Up to 25,000 sq. ft. per day with a minimum dislocation of production.
Manufacturers of specialized floorings to meet all industrial demands.
EMERY—COMPOSITION—MASTIC
No matter what your production or traffic demands, we can supply a floor to meet your need.
Write today for complete information

FLASH-STONE COMPANY, INC.
ERIE AND PULASKI AVES., PHILA. 40, PA.

BREVITY—Identify by IEN - 4732 if you write the maker

HAVE YOUR PACKING LIST:
Weather protected
Secure against rough handling
Ready for immediate identification
Easy to find Kept legible

Improved shipping practice at low cost export or domestic with Fabco Packing List Protectors of weather-resistant asphalt composition board.

Approved and used by Army Quartermasters, various Navy Departments, by Signal, Marine and Medical Corps and by prime and sub-contractors operating under the Armed Forces.

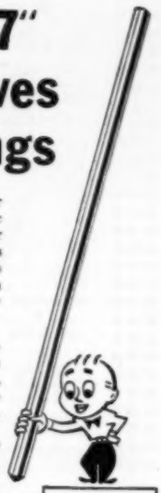
The material complies with Specification MILB-3106, as well as tentative Ordnance Specification AXS-1623. Fabco Packing List Protectors are listed in Navy Catalogue under Stock #53-P-38250-230.

Write for descriptive folder, price list.
Dealer inquiries invited.

FABRICATED PRODUCTS CO.
WEST NEWTON, PA.

BREVITY—Identify by IEN - 4733 if you write the maker

Exclusive 7" ERASER saves your drawings



● The exclusive 7" rubber eraser of the Bruning electric erasing machine saves your valuable drawings. It prevents those costly eraser fly-outs which are unavoidable with short erasers of ordinary machines.

● Stays cool, even with continuous use, and has lifetime lubrication. There's no wobble, no vibration – just easy, accurate erasures made *in seconds.*

● Write today for free folder, "Exclusive Erasing Advantages." It gives you all the reasons why Bruning is your *best buy* in electric erasers.

BRUNING

CHARLES BRUNING COMPANY, INC.
Dept. H-51, 100 Reade Street
New York 13, N. Y.

BREVITY—Identify by IEN - 4734 if you write the maker

LIKE AN **ATOM-IC** EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 a $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. **"EASY-TITE"**

Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber – to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems - that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC REINFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-51
2503-05 Third Avenue, New York 51.

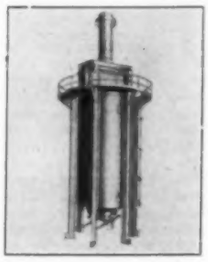
SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

BREVITY—Identify by IEN - 4736 if you write the maker

PROCESSING . . Direct fired heater, transfer temperatures to 750 deg. F.

Source: STRUTHERS WELLS CORP.
1001-5 Pennsylvania Ave., Warren, Pa.



The company announces standardization of its Type-C heater in its line of direct-fired equipment which has long been in service to supply heat for process purposes employing heat-transfer fluids such as Dowtherm, Hydrocarbon oil, Aroclor 1248, high-temperature salts, metals including mercury and sodium and lead, gases and hot water. The standardized units range in capacity from 100,000 to 15,000,000 btu. per hour. They can be fired by oil, gas or other suitable means as required.

Bulletin B-45, 36 pages, illustrates and provides detail information on the whole subject of heat transfer for process purposes and on the equipment available from the company.

BREVITY—Identify by IEN - 4737 if you write the maker

DRILLING . . Hand operated tool with enclosed gears, ¼ in. capacity

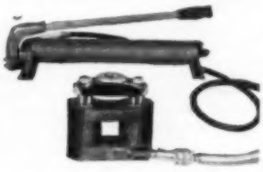
Source: STANLEY ELECTRIC TOOLS DIVISION
478-82 Myrtle St., New Britain, Conn.

Enclosed gears protect a worker's hands and clothing in this new No. 610 "100 Plus" hand drill. It mounts its spindle on ball bearings in the aluminum gear housing and employs a hardwood handle and hand-operated ¼-in. chuck. The metal trim is nickel plated. Weight is 1⅝ pounds. List price of the new tool is $5.50.

BREVITY—Identify by IEN - 4738 if you write the maker

JACK . . Hand hydraulic design for pushing and pulling, rates 15 ton

Source: OWATONNA TOOL CO.
371 N. Cedar St., Owatonna, Minn.



Hand - operated pump, 6 ft. of high-pressure hose and a double piston ram with cross head and center hole make up this new Power-Twin assembly. The ram measures 5½ in. in height in retracted position and provides a 2-in. travel. The pump develops pressure to 10,000 pounds. Wire guards protect the hose near its two ends. Couplings at the ends are tested for 24,000 lb. pressure. Assembly weight is about 10 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 4739 if you write the maker

"HOLD EVERYTHING" with this strong, open-side, all-purpose handy vise.

Takes work from 3 sides
Range from 2⅜" to 8⅝"
Positive non-slip grip

Ideal for valves, manifold fittings and all other hard-to-hold items.

● Heavy, one-piece malleable cast-iron body is virtually indestructible. Takes work from 3 sides. Four easily replaceable dies in lower jaw provide positive grip to hold work safely in balanced non-slipping position. Easily installed non-scarring soft jaws also available. Vise screw made of toughest steel has coarse Acme thread for rapid adjustment. Counterbalanced handle, mounted at efficient arm height, can be quickly extended for extra leverage. Wide range replaces three ordinary vises. Far safer and faster than chain tongs. For folder and prices address . . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX, LOS ANGELES 54, CALIFORNIA

BREVITY—Identify by IEN - 4740 if you write the maker

All long-length bushings listed as standard in the Universal Catalog are regular stock items, which means speedier delivery to you. 146A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

BREVITY—Identify by IEN - 4741 if you write the maker

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces ...inch pounds ...foot pounds (All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P. A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

BREVITY—Identify by IEN - 4742 if you write the maker

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	400	850	1250	1600
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
ADDRESS _____

BREVITY—Identify by IEN - 4743 if you write the maker

NEW BOOKLET OFFERS TIPS ON TESTING... write for FREE copy

G.E.'s new "Buyer's Guide to Test Instruments" helps you select the right instruments for different electrical testing and maintenance jobs. For instance, the "Guide" tells you what instruments to use to:

- prevent motor burnouts
- improve power factor
- locate grounded coils
- predict motor rotation
- balance loads
- record voltages
- check power losses
- improve efficiency, etc.

G-E portable testing instruments are sturdy, accurate, easy to use. For complete data on how they can help you, send for your copy of the "Buyer's Guide" today. Write Section 602-180, General Electric Company, Schenectady 5, N. Y.

GENERAL ELECTRIC

602-180

BREVITY—Identify by IEN - 4744 if you write the maker

SELF -CONTAINED -CONTROLLED -SUFFICIENT -RELIANT

Stacon Temperature Regulator*

The patented Farris Stacon Temperature Regulator is easily the most independent regulator available today. It's unique. It stands alone. It's trustworthy. It needs no watching. It's perfect for the man who wants no cause for worry . . . who wants to relax in the sure knowledge that his temperatures are constant.

Here's why Stacon stands alone in the field. It has no packing glands to leak or bind . . . the stem moves freely. The liquid in the bulb flashes to vapor in the power bellows, assuring hairtrigger response to move the disc. It operates with unbelievable accuracy—to within plus or minus 1 degree—and it operates with that accuracy under *all* conditions. Stacon provides air-operated accuracy at low, self-operated cost.

Get the details on the one truly outstanding temperature regulator—Stacon. Send for Bulletin 50-1000 to get all the details.

*Patented and Patents Pending

Farris Stacon Corporation
632 COMMERCIAL AVE., PALISADES PARK, N. J.

BREVITY—Identify by IEN - 4745 if you write the maker

FORCE *Automatic* NUMBERING HEAD

Stock models or specially designed

Send for catalog "H"

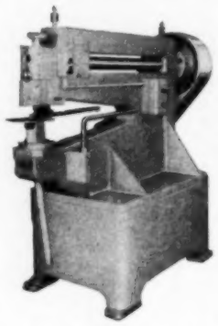
THREE QUARTERS OF A CENTURY'S SERVICE

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

BREVITY—Identify by IEN - 4746 if you write the maker

NIBBLING . . Motor driven machine for ¼ to ½ in. mild steel, five sizes

Source: AMERICAN CHAIN & CABLE CO.
927-31 Connecticut Ave., Bridgeport 2, Conn.



A work outline, either external or internal, can be followed by free-hand guiding or by working to a template that clamps to a metal work sheet for movement through this new machine. It is available in five models with throat depth ranging from 24 to 36 inches. Each of the five machines is supplied with an assortment of circular piloted punches, mating dies and holders, tools, template clamps and operating instructions.

Stroke is adjustable by means of a wrench at the main drive shaft. The punch is mounted in a holder that can be adjusted vertically. When a locking fork is released the punch can be raised and lowered to start an inside cut. An adjustable stripper plate holds the work against the die. Supporting rods on both sides hold work sheets in correct horizontal position. Each machine is complete with electrical equipment and is ready to set up.

BREVITY—Identify by IEN - 4747 if you write the maker

RELAY . . Hermetically sealed, 2 to 6 poles, double throw design

Source: STRUTHERS-DUNN INC.
148-52 N. 13th St., Philadelphia 7, Pa.

Palladium contacts are employed to provide nominal rating of 2 amp. at 28-volt dc. in this new sealed relay. It has been designed to meet USAF. Specification MIL-R-5757. Type A is available for operation at ambient temperatures to 200 deg. C. Type B is employed where the temperature is not greater than 85 deg. C. Both designs are intended for extreme operating conditions such as those encountered at high altitudes as in jet-propelled aircraft and guided missiles.

The assembly is enclosed and sealed within a metal container measuring 1¼ in. in diameter by 1½ in. in length. Weight is 3 ounces. Operation is by a rotating type of solenoid in connection with balanced moving parts to eliminate contact bounce or false operation under acceleration to 50G or vibration to 10G. The contact rating can be increased to 12 amp. If the required number of relay operations does not exceed 50 to 100 for expendable application such as in guided missiles. Operating interval is about .005 second.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

FIND WHAT YOU WANT?
Products and services are listed in index, page 110.

BREVITY—Identify by IEN - 4748 if you write the maker

Acme Offers Complete Facilities for

PRECISION GRINDING

FAST SERVICE . . . LOW COST

- INTERNAL
- EXTERNAL
- CRUSH FORM
- CENTERLESS
- TWIN DISC
- SURFACE
- THREAD

Acme is equipped to handle all types of precision grinding. Expert craftsmen, using newest methods and modern equipment, will do the job for you faster, better, more economically. Acme also offers a flat lapping service that can finish surfaces to within millionths. Write for details.

Acme Industrial Company
Makers of Standardized Jig & Fixture Bushings
215 N. Laflin Street • Chicago 7, Illinois
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 25 YEARS

BREVITY—Identify by IEN - 4749 if you write the maker

IN WIRE-MESH PRODUCTS LET JELLIFF DO IT!

For 70 years we've been weaving Wire Mesh. And a good part of that time we have also been making things of Wire Mesh for people who find it is cheaper, easier and generally more satisfactory to "let Jelliff do it."

From big Dipping Baskets to tiny precision filters — from fuel strainers to what-is-it gadgets — JELLIFF's Custom Production Department turns out fabricated Wire-Mesh products at speed, price and precision that mean lower costs and a stronger competitive position for our many customers.

If you buy or make wire-mesh assemblies as components of your own products and have not yet had an estimate from Jelliff, write today for details. No obligation, even if you enclose a blueprint for us to figure on. Address Department 12.

THE C. O. JELLIFF MFG. CORP.
DIPPING BASKETS · LENTROMESH · RESISTANCE WIRE · WIRE MESH PARTS · WIRE CLOTH · STRAINERS • FILTERS
SOUTHPORT CONNECTICUT

BREVITY—Identify by IEN - 4750 if you write the maker

for ANODIZING ALUMINUM process

Newly developed Tank gives

3 YEARS SERVICE!

VALUABLE SAVINGS IN TIME—OPERATION—PRODUCTION

Especially designed for anodizing. The New Langsenkamp anodizing tank gives you at least 3 full years of service under normal operations.

Langsenkamp anodizing tanks are reinforced within themselves. Buckling is kept to a minimum — galvanic action prevented!

Available in all sizes, in stainless steel, aluminum or copper. Lead lining when desired. Reasonably priced.

F. H. LANGSENKAMP COMPANY
229-235 East South Street Indianapolis 25, Ind.

BREVITY—Identify by IEN - 4751 if you write the maker

Machine de-burring with NOBUR *pays BIG production dividends!*

NOBUR Tools *turn a slow bench operation into fast and efficient machine work!* Remove burrs on multi-walled parts with a smooth, clean cutting action that won't mar highly finished surfaces. Eliminate rejects from slow, costly hand work with files, scrapers and abrasives.

Nobur Tools are used on any lathe, drill press, portable drill or flexible shaft. Operation of the double-edge cutting blade is easy and safe . . . no skilled help is required, and the spindle never needs to be stopped for either de-burring or chamfering.

Nobur Tools cut freely on either hard or soft metals, are simple in construction and are made in sizes to cover a full range of hole diameters. ***NEW "DS" SERIES extends range of NOBUR applications to holes as small as ⅛" diameter. WRITE FOR FULL DETAILS TODAY!**

NO BUR TOOLS

NOBUR MANUFACTURING COMPANY
717 N. VICTORY BLVD., BURBANK, CALIF.

BREVITY—Identify by IEN - 4752 if you write the maker

• SMALL
• COMPACT
• WELL DESIGNED
• DEPENDABLE

AGASTAT

TRADE-MARK

TIME DELAY RELAY

PROTECTS BIG INDUSTRY PROCESSES

Address inquiries to Special Products Division

American Gas Accumulator Company
1027 Newark Avenue, Elizabeth 3, New Jersey

BREVITY—Identify by IEN - 4753 if you write the maker

THINSTEEL *KICKS OUT MR. O. V.* (Profit Thief)

You can "give the boot" to Oversize Variation in strip thickness, not uncommon in ordinary strip steel, by specifying and using Thinsteel. When deliveries of this precision cold-rolled strip steel are possible under today's conditions, it assures you of maximum yield per ton, *particularly important now when every ton of steel must be stretched as far as possible* —"kicks out" for good the hidden profit robber, Mr. O. V.

CMP Thinsteel in low carbon, high carbon (annealed or tempered) and stainless grades, offers uniformity in all physicals too, in coil after coil—reduces shut downs, increases die life and units of production for each hour of machine time expended.

Now, CMP is actively engaged in expanding Thinsteel production. New Mills and other additional producing facilities are planned and there is more to come.

CMP THINSTEEL TRADE MARK

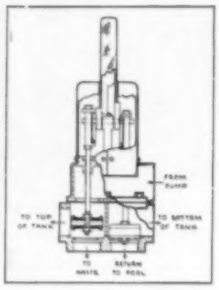
the Cold Metal Products co.
YOUNGSTOWN 1, OHIO

NEW YORK • CHICAGO • DETROIT • INDIANAPOLIS
LOS ANGELES • ST. LOUIS

BREVITY—Identify by IEN - 4755 if you write the maker

VALVE . . Lever and cam operated, selects any of four outlets, to 150 lb.

Source: PADDOCK ENGINEERING CO.
8402 Santa Monica Blvd., Los Angeles 46, Calif.



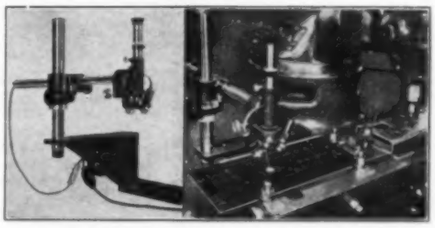
Single inlet to this new dual-piston cam-operated valve can be connected to any one of four outlets by positioning the operating lever. The valve is primarily designed to replace four control valves previously required in normal piping of a standard filter installation to position the filter for service, backwash to waste, by-pass raw water to waste, and seal off the filter from the raw water source. Sizes are 1½ and 2 in. with threaded ends and 4 in. in cast-iron flanged construction.

A brass body, Monel Metal stems and molded-rubber seats are standard construction in the two smaller sizes. Moving parts can be removed after disconnecting one pipe union and unbolting the body flange. The company is prepared to adapt the valve for hand, gear or other forms of operation.

BREVITY—Identify by IEN - 4756 if you write the maker

CENTERING . . Optical unit locates work to layout for machining

Source: BOECKELER INSTRUMENT CO.
29-33 E. Rillito St., Tucson, Ariz.



Jig boring work can be handled on the table of a knee-type milling machine, such as the Bridgeport or equivalent, by application of this new optical attachment. Locations can be set and duplicated within .002 in. working to a scribed layout on a suitable flat plate secured beside the work piece.

The operator positions the table with the normal machine controls as he observes the template through the 32X eyepiece on the illuminated microscope. He registers the cross hairs in the microscope with the scribed lines on the template. Two spot lamps illuminate the template locally. A tracing finger assists in finding a position. The microscope is supported by an adjustable bracket that secures to the machine housing. List price is $335.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4757 if you write the maker

LABOR-SAVING Moto-Bug (POWER WHEELBARROW)

- Hauls 10 cu. ft. of scrap, castings or bulk materials in big capacity hopper . . . makes man-hours 3 to 4 times more productive.
- Full power forward and reverse requires "no push, no pull" to travel, back up or to spot heavy loads.
- Driver rides on rear step (optional) . . . large steering wheel provides effortless maneuvering.
- Handy 33" width clears narrow doorways and aisles.
- Standard-make, 4 h.p. engine easily takes full load up 20% ramps and grades.

Interchangeable flatbed

moves over 1200 lbs. on sturdy 32" x 4 ft. platform . . . tilts for easy pull-away when unloading . . . has stake pockets for sideboards. Fork lift and scraper blade extend Moto-Bug's one-man economies to all kinds of material-handling jobs.

Get more facts from your Kwik-Mix distributor now . . . or send for Moto-Bug bulletin TODAY.

KWIK-MIX CO.
PORT WASHINGTON, WIS.
(Koehring Subsidiary)

BREVITY—Identify by IEN - 4758 if you write the maker

CP Super Cycle Grinder packs more power per pound than any other portable tool.

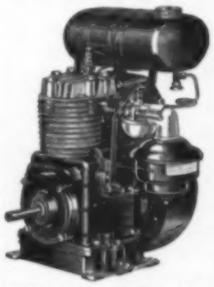
SPEEDING ASSEMBLY with 600 Super Cycle Tools

More than 600 Super Cycle Tools are in use in one automotive assembly plant because they give greater output per man-hour than any other type of portable electric tool. They have squirrel cage induction type motor, operating on 360 cycle, 3-phase, 220-volt current. Maintain full working speed under load. Upkeep is low; no brushes to replace, no armature to burn out. Write for Catalog 905-2.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 4759 if you write the maker



MODEL K-12-2, 3 H. P. 4-cycle, single cylinder, air-cooled. Length 14", width 14", height 19". Wt. 43 lbs.

RELIABLE POWER FOR:
CONCRETE MIXERS
ROAD OILERS • COMPRESSORS
FLOOR SWEEPERS
GENERATORS • HOISTS
CENTRIFUGAL PUMPS
LIFT TRUCKS • PORTABLE SAWS
SNOW REMOVAL EQUIPMENT
SPRAYERS • VIBRATORS

KOHLER ENGINES

Four-Cycle Air-Cooled

Kohler Engines are engineered and built to give the economical service that has won world-wide acceptance for Kohler Electric Plants in construction and other industries. Made in several sizes, they are suited to a wide range of uses. Kohler engineers will gladly assist in working out applications for your particular requirements.

Kohler Co., Kohler, Wisconsin. Established 1873.

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION PARTS

BREVITY—Identify by IEN - 4760 if you write the maker

Link-Belt CAR SPOTTER releases manpower for other jobs

Get faster car spotting

Reduce switching and demurrage time to a minimum. One man with two or three turns of rope around the motor-driven capstan will handle up to six loaded railroad cars. Available with 5 or 10 hp, integral or separate motors, stationary or portable.

Link-Belt offers a complete line of car spotters . . . also specializes in drum type puller applications.

WRITE TODAY
For 16 Page Bulletin 1992-A

LINK-BELT COMPANY:
Chicago 8, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Springs (South Africa). Offices, Factory Branch Stores and Distributors in Principal cities.

BREVITY—Identify by IEN - 4761 if you write the maker

SET RIVETS *faster* with T-J RIVITORS

CUT COSTS!

Speed up assembly . . . automatically feed and set solid rivets. Electrically powered Rivitor for 1/16" to 1/4" diam. solid steel rivets up to 7/8" long; air-powered Rivitor for aluminum alloy rivets up to 1/4" diam. or steel rivets up to 1/8" diam., up to 3/4" long. Throat depths, 8" to 36". Write for bulletins 646 & 847. The Tomkins-Johnson Co., Jackson, Mich.

T-J RIVITOR used for automotive clutch plate assembly. Saves time and labor doing a four-fold job—assembling, setting, inspecting and ejecting.

TWIN RIVITOR used for riveting flat steel springs to brackets for automobile horns.

33 YEARS EXPERIENCE

T-J TOMKINS-JOHNSON RIVITORS

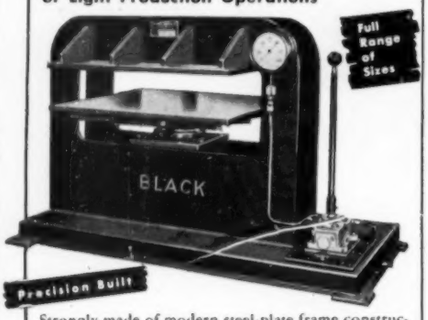
BREVITY—Identify by IEN - 4762 if you write the maker

BLACK BROTHERS

HAND OPERATED . . .

HYDRAULIC LAMINATING PRESS

for Laboratory and Experimental Work or Light Production Operations



Strongly made of modern steel-plate frame construction, this press will offer years of excellent service. Variations may be had in the width of platen, vertical opening, length of stroke, and total pressure applied. Write for literature.

THE BLACK BROTHERS CO., INC.
MENDOTA, ILLINOIS, U. S. A.

BREVITY—Identify by IEN - 4763 if you write the maker

SPEEDY AIR VISE

SPEEDS UP ✓ MILLING ✓ PUNCHING ✓ DRILLING ✓ BENDING ✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

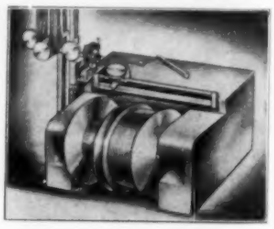
W. R. BROWN CORPORATION • 5730 Armitage Ave. • Chicago 39, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

BREVITY—Identify by IEN - 4764 if you write the maker

WINDING . . Constant tension unit for plastic or rubber coated wire

Source: JAMES L. ENTWISTLE CO.
46 Church St., Pawtucket, R. I.



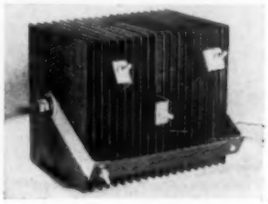
Dual Take-Up Class T is a new double-drum winding machine. It applies with dancer rolls to receive wire from an extruder or continuous vulcanizing machine and winds this wire first on one reel, then on another when the first one has been filled. Speed is synchronized automatically with the extruder or vulcanizer. Reel speed automatically compensates as the wire fills the reel to a pre-determined footage controlled by a counter. When a given reel is full the wire is transferred automatically to the empty reel at high speed by a traverse mechanism. A knife moves forward, cuts the wire cross-over between the reels and returns to its original position. The operator then can remove the filled reel and place another empty one.

Winding is started on a new reel about 1½ in. in from the inside flange to travel toward the flange and then reverse to hold the end and start the first coil. A filled reel is automatically stopped by a pneumatic brake and a signal tells the operator that it is ready to be unloaded. This operation is aided by a built-in pneumatic hoist so the operator is not required to lift the weight. Wire sizes that can be handled range from .075 to 0.5 inch. Winding speed is at 1,200 feet per minute. Overall dimensions are about 5 by 4 by 4 feet. A machine to handle reels measuring 30 to 36 in. in diameter has a list price of approximately $5,000.

BREVITY—Identify by IEN - 4765 if you write the maker

RECTIFYING . . Selenium assemblies are available in ten basic cell sizes

Source: SARKES TARZIAN INC.
413-17 N. College Ave., Bloomington, Ind.



Individual cells measure 1 by 1 in. to 4¼ by 12 in. in ten basic sizes in the company's new line of elements for assembly of its Centre-Kooled power rectifiers. Any practical current and voltage range can be built up by employing series-parallel connections and combinations. Rating includes 26 volts maximum rms. per cell. Continuous dc. current, at 35 deg. C., ranges from .1 to 11.2 amp. on single-phase half-wave and from .265 to 30 amp. on three-phase half-wave. The company offers assistance by its engineers in any problem dealing with electric power conversion. This service involves no obligation on your part.

In addition to the Centre-Kooled unit the new line includes high-voltage rectifiers available in two cell sizes with inverse rating to 5,000 volts and dc. rating of 5 and 25 milliamp. in half-wave circuit or 10 and 50 milliamp. in full-wave circuit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4766 if you write the maker

Rebuild Worn Parts by *Metallizing*

Save time, money and critical parts by Metallizing with new Mogulectric Gun. Adds metal to metal with fine atomization for perfect bond. Simplified, easy to use, engineered to give trouble-free service.

Also ideal for spraying corrosion-resistant metal coatings and for production work.

If you already have metallizing equipment, why not consider a trade-in now for the new Mogulectric Gun.

Write for new booklet containing complete information on equipment as well as production and maintenance applications.

METALLIZING COMPANY OF AMERICA
3520 W. Carroll Avenue • Chicago 24, Ill.

BREVITY—Identify by IEN - 4767 if you write the maker

POLYKEN Nº 822 can do this!

In the above photo revolutionary new polyethylene-backed electrical tape is being used to wrap high-tension cables in *one* easy step. No packs, wraps, or compounds needed. No. 822 stretches both ways, conforms to rough and irregular surfaces. High moisture resistance. Solvent and corrosion proof.

Ask your *Polyken* distributor or write for free folder, "Tape is a Tool," Address *Polyken*, Dept. IEE, 222 West Adams St., Chicago 6.

ONE OF THE NEW

Polyken® ELECTRICAL TAPES

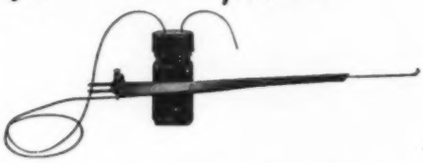
TAILORED TO YOUR JOB

Polyken Industrial Tape, Department of Bauer & Black, Division of The Kendall Company

BREVITY—Identify by IEN - 4768 if you write the maker

ARCCO *NEVER-DRY* PEN

Writes for Months



REPLACES OTHER MAKES • USES REGULAR INKS

Regardless of pulsations or other causes of ink failures this new Never-Dry Pen will make clean and complete records. Ink supply lasts for several months without refilling reservoir. Capillary tube from ink bottle placed in instrument case feeds pen with continuous flow. Closed system sealed from atmosphere prevents clogging and dirt accumulation.

Weight of pen is constant at all times thus insuring extreme accuracy. No slopping or dripping. Stainless steel construction—no corrosion. When ordering, specify make and type of recording instrument.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

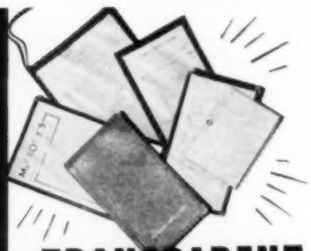
$6.00 each Net
Send for quantity prices

BREVITY—Identify by IEN - 4769 if you write the maker

Keep work-records FRESH and CLEAN!

Types and sizes for
SHOP ORDERS
JOB TICKETS
COST DATA
WORK CHARTS
BLUE PRINTS
CARDS & PASSES
INSPECTION CHARTS
MACHINE RECORDS
INSTRUCTION DATA, etc.

SOLD BY LEADING STATIONERS



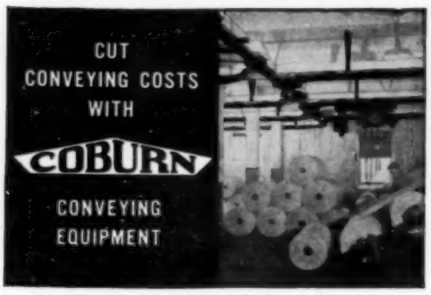
TRANSPARENT ACETATE HOLDERS

Crystal clear Ful-Vu plastic protective holders for shop or factory use offer positive protection against dirt, smudges, grime and damage. Besides the types shown, Ful-Vu can produce any desired shape or size unit to order. Write for catalog—or send details of your requirement for prompt quotation.

PROTECTS Ful-Vu SYSTEMS OF DISPLAY GLORIFIES

COOKS' INC., Camden, N. J.

BREVITY—Identify by IEN - 4770 if you write the maker



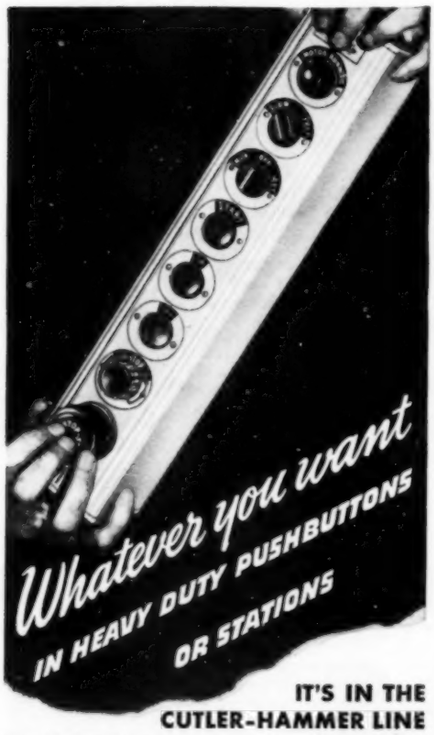
You can lower costs, speed production and reduce accident hazards with Coburn—the original enclosed overhead monorail. Sectional design permits easy installation, rearrangement or extension, as required. Coburn Enclosed Track does not obstruct floor space, requires very little headroom, simplifies spotting of work directly over machines. Can be used with hand chain or electric hoist. Carries loads up to 3000 lbs. manually or power operated.

Write today for catalog on Enclosed Track, Bracket-type Jib Cranes, Travelling Crane and Monorail installations. Engineering help available without obligation.

COBURN PRODUCTS CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Engineering: 56 Sterling Street, Clinton, Massachusetts
Executive Office: 500 Fifth Avenue, New York 18, New York
Sales Offices: Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • Philadelphia
Pacific Coast — The California Wire Cloth Corporation, Oakland 6, California

BREVITY—Identify by IEN - 4771 if you write the maker



IT'S IN THE CUTLER-HAMMER LINE

The Cutler-Hammer Line of Heavy Duty Pushbuttons and Stations offers you every type of operating element, every type of station, every type of circuit combination. With this broad range, the free interchangeability and the flexibility of this line, you are able to get just the heavy duty pushbutton equipment you need, instead of putting up with unsatisfactory makeshifts.

This line has been engineered from the start for such broad coverage of needs . . . through the development of a fundamentally correct contact mechanism capable of being incorporated into diversified types of elements.

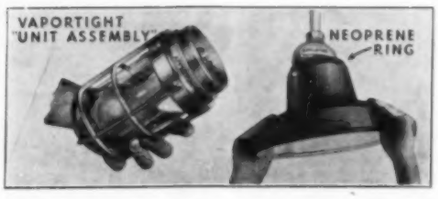
Among the advantages offered by this line are complete interchangeability, uniformity of design and performance, exceptionally long life, ease of installation through visible contacts which facilitate circuit identification and terminals which are unusually large and accessible. All basic elements are Underwriter-approved. CUTLER-HAMMER, Inc., 1378 St. Paul Ave., Milwaukee 1, Wisconsin. *Associate:* Canadian Cutler-Hammer, Ltd., Toronto, Ont.

CUTLER-HAMMER
MOTOR CONTROL
C-H

BREVITY—Identify by IEN - 4773 if you write the maker

LIGHTING . . Incandescent fixture, vapor tight, applies on rigid conduit

Source: APPLETON ELECTRIC CO.
1716 Wellington Ave., Chicago 13, Ill.



Unit assembly of the receptacle and its lamp, together with the vapor-tight globe and guard, threads into and out of position in the fixture body of this new Type V-51 series of convertible vapor-tight lighting fixtures. The design is intended for assembly on rigid conduit and permits replacement of the lamp and its unit parts without having to handle the individual parts separately. The shock-absorbing socket permits use of standard lamps.

The line includes 18 types of malleable-iron fixture bodies for pendant, ceiling or bracket mounting. All are threaded to take the 100-watt or the 150/200-watt unit-assembly lamp. Bodies, except the bracket type, are grooved to mount 100, 150 or 200-watt steel reflectors in a choice of standard-dome, shallow-dome, deep-bowl or 30-deg. angle style.

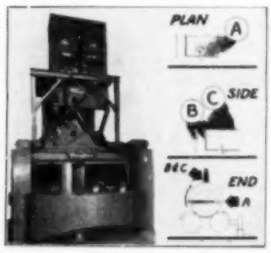
The reflectors are finished with green baked porcelain enamel outside and white enamel inside. A neoprene ring or grommet around the top rim of the reflector carries a bead which snaps into a groove encircling the fixture body to hold the reflector in place for quick removal.

Bulletin 5-A, 24 pages, presents illustrated data and detail illustrated tabulations of equipment making up the V-51 Series of convertible vapor-tight lighting fixtures.

BREVITY—Identify by IEN - 4774 if you write the maker

CLEANING . . Abrasive blast machine handles 1,000 drums and lids per day

Source: PANGBORN CORP.
230 Pangborn Blvd., Hagerstown, Md.



The operator of this new Model ES-400 abrasive-blast cleaning machine loads 30 or 55-gal. returnable steel drums and lids onto roller cradles mounted on a circular table in the main housing. He engages the table drive to index to cleaning position where the rollers engage a pulley causing drum rotation.

Movement of the main table stops momentarily when the drum is in cleaning position and three Roto-Blast heads direct abrasive to the interior, the exterior and the drum head as shown in the diagram. Dirt, rust, paint and any foreign material are removed down to the bare metal.

A companion machine, Model ES-382, operates in similar manner to rotate and position drums in connection with a single Roto-Blast head. It will clean about 500 drums per day.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 4775 if you write the maker

UNIVERSAL
INDUSTRIAL CONVEYOR
Low First Cost . . . .
Low Maintenance

- Removable sides to permit handling large cartons or parts.
- Motor totally enclosed inside conveyor body easily accessible through removable ventilating panel.
- Elevates to desired height with simple hoisting mechanism.
- Driven by means of roller chain to roller bearing equipped gear box.
- Main drive shaft and idler pulley operate on double-sealed ball bearing.
- Standard belt width, 12 inches. Other widths can be furnished to meet your requirements.
- Belt speed, 74 F.P.M.—adjustable if desired.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
SHIPMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 4776 if you write the maker

. . . there's a SUNDSTRAND Straight-Line Action Air Sander to solve it!

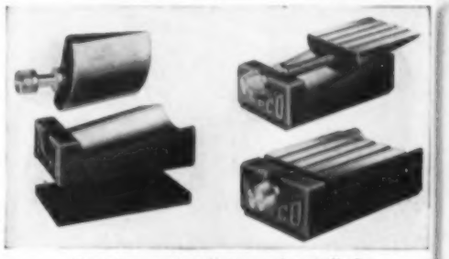
No swirls, no pressure marks, no fatiguing vibration! Used throughout the world for: Wood finishing . . . building materials, furniture, cabinets, wood parts, etc. • Plant production and maintenance work • Finishing metal and plastic parts • Truck, car and machinery refinishing • Both single and double pad models are available. Ask for bulletin IE-6

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 4777 if you write the maker

Machine Leveler Features Vibration Absorbing Pads



Saves time on installation and periodical re-leveling adjustments

Something new in a machine leveling jack is this Empco Jack, featuring vibration absorbing mounting pads. The pads are of a new vibration absorbing material developed for use under heavy loads to eliminate creepage and reduce machine maintenance costs due to vibration.

Company officials stated that one model with ¼" thick pad under a load of 92½ pounds per square inch has reduced vibration 43 percent, while another model, with ¼" thick pad reduced vibration 74 percent.

Lower in design, 2" high, 6" long and 3½" wide, the new jack's self-aligning feature has been improved by compensating for more unevenness of floor while retaining full bearing of lifting surfaces up to a maximum height of adjustment.

Direct your inquiry to Enterprise Machine Parts Corporation, 2731 Jerome Ave., Detroit 12, Mich.

BREVITY—Identify by IEN - 4778 if you write the maker

Once Again BAKER Makes Industrial Truck History!

THE NEW
BAKER
TYPE FS
2000 pound FORK TRUCK

POWER EFFICIENCY! Baker-built motors for travel, hoist and tilt develop the highest horsepower for any motors of their size and weight.

LOWER MAINTENANCE, GREATER SAFETY! Dynamic-braking, NoPlug Controller, operated by accelerator pedal, saves wear and tear on motor, drive axle, service brake and tires.

TROUBLE-FREE TRANSMISSION! Efficient worm-drive power axle minimizes gear losses and reduces maintenance.

MAXIMUM MANEUVERABILITY, SMOOTHER RIDING! Baker patented wide-angle steering axle is mounted longitudinally in jumbo-size rubber blocks accommodating it to uneven roadways, and absorbing shock from rough floors.

SAFE, TIRELESS OPERATION! Automotive-type steer, soft-touch brake, cushion tires, greater visibility for operator.

HYDRAULIC LIFT AND TILT! Low-pressure hydraulic system for lift and tilt motions, increases safety and minimizes seepage.

RUGGEDNESS AND STAMINA! All-welded steel truck frame with integral bumper counterweight. Most efficient structural design for strength and utilization of space.

Write for Bulletin 1327

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*
1226 WEST 80th STREET • CLEVELAND 2, OHIO

Baker INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 4779 if you write the maker

Easy to Add or Change Circuits with

NMO "PLUG-IN" PANELBOARD

● A "natural" wherever a large number of branch circuits for lights, appliances and business machines must be switched and protected.

Among important advantages: unusual flexibility, ease of wiring and compact size. And—"plug-in" multi-breaker units are thermal-(*coilless*) magnetic, giving 2-way protection.

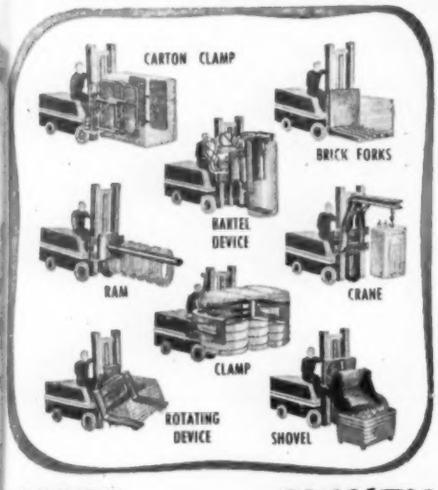
Write for Bulletin SA567R which gives complete details. Square D Company, 6060 Rivard St., Detroit 11, Mich.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 4780 if you write the maker



MORE FOR your MONEY ....IN CLARK Attachments

You employ your fork-lift truck to best advantage by getting the most out of it. CLARK attachments for CLARK fork-lift trucks enable you to do just that.

Interchangeable in most cases with standard forks, these attachments make a fork-truck *many machines in one*—a truck out of which maximum rather than just normal benefits are derived. And all this at a cost so low that it is quickly and painlessly absorbed. To make the most of your fork-lift trucks—to discover uses for them that might not have occurred to you, check with your CLARK Dealer (he's listed in the Yellow Pages of your telephone book) or fill out the coupon below and send it to us attached to your business letterhead.

CLIP THE COUPON

CLARK ELECTRIC AND GAS POWERED FORK TRUCKS

AND POWERED HAND TRUCKS • INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 49 MICHIGAN

Please send: ☐ Condensed Catalog ☐ Movie Digest ☐ Material Handling News

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Firm Name _____

Street _____

City _____ Zone ____ State _____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE DEALERS IN DESIRABLE LOCATIONS

BREVITY—Identify by IEN - 4782 if you write the maker

CONTROL . . Flexible shaft unit for positioning use is non-magnetic

Source: KUPFRIAN MFG. CO.
200 Prospect Ave., Binghamton, N. Y.

Equipment elements are positioned by turning a knob in connection with this new non-magnetic flexible shaft unit as in the focuser for television tubes shown in the illustration. In this particular installation the reluctance of the magnetic circuit is varied by a sliding steel collar controlled by a lead screw at the output end of the flexible shaft.

The shaft is made of bronze and can be enclosed within an insulating plastic or braided-cotton sleeve. Applications extend to driving instruments such as tachometers. Each assembly is supplied to specification for size, length, materials and end fittings.

BREVITY—Identify by IEN - 4783 if you write the maker

CORROSION PROOFING . . Inhibitor also is wetting agent and detergent

Source: HAAS MILLER CORP.
Bristol & 4th Sts., Philadelphia 40, Pa.

In gallon cans to 55 gal. drums

Immunol trade names a new colorless liquid for mixture in small amounts with water. It prevents corrosion in applications where the water is used for metal cleaning. It acts as a wetting agent in the water and as a detergent to promote the water's action. It contains no odorous, toxic, inflammable or explosive solvents nor any soap or alkalai. It is not oily or greasy and will not turn red.

It leaves an invisible protective coating over a metal surface. It will not affect painted surfaces when applied at normal temperatures. It dries quickly and can be removed by rinsing in plain water when this is desired.

BREVITY—Identify by IEN - 4784 if you write the maker

WELDING . . Remote control for motor driven dc. arc equipment

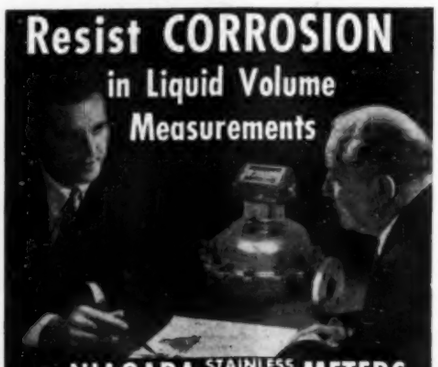
Source: FOSTER TRANSFORMER CO.
3818-22 Colerain Ave., Cincinnati 23, Ohio

New design of the company's combination of electrode holder and remote arc-welding control, previously described IEN-246-50, employs a rag-base phenolic compound to permit application in heavy-duty service. As in the previous design, heat can be adjusted, polarity can be selected and the welding machine can be started or stopped by turning two knobs built into the holder. It is available for a range of equipment makes to a rating of 400 amperes. Complete equipment includes the holder with its cable and a control housing that mounts on the welding machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 4785 if you write the maker

Resist CORROSION in Liquid Volume Measurements



with NIAGARA STAINLESS STEEL METERS

Your problems of metering corrosive liquids are probably solved with Niagara Chemical Meters. Built of type 316 stainless steel, they measure with the same accuracy as the standard bronze meters, best-known in industry for many years. They are simple, practical, reliable. Investigate today!

Please send me complete details on the uses Niagara Chemical Meters offer me for:

Liquid .....

Temp. ....°F Pressure ....p.s.i.

Flow rate ..... g.p.m.

Company .....

By .....

Address .....

BUFFALO METER CO.

2929 MAIN STREET BUFFALO, N. Y.

BREVITY—Identify by IEN - 4786 if you write the maker

Springs are Springs

maybe so for most people . . . but NOT for ACCURATE

HOW often have you heard a spring user or even a manufacturer say "Springs are springs, what difference who makes them if the price is right?" Here at Accurate, we think it makes a big difference. *Exact* conformance to specifications can be mighty important if it means easier, faster assembly and better performance for your product. "Know-how" and facilities for making springs the least costly way can mean many dollars for you. Write for details.

ACCURATE SPRING MFG. CO.
3807 W. LAKE ST. • CHICAGO 24, ILL.

Accurate Springs — Springs • Wire Forms • Stampings

BREVITY—Identify by IEN - 4787 if you write the maker

for Anti-icing, Laminating Dies, Tubes, Air Heaters, Hydraulic Systems, etc.

LOW WEIGHT PLUS MAXIMUM HEAT TRANSFER

Electrofilm is a thermosetting electrically conductive plastic material which is stable, unaffected by solvents and can be supplied in watt densities up to 25 watts per sq. in. Operates at temperatures up to 400° F. and weighs less than 2 ounces per square ft.

Used by: Aircraft Companies, Armed Services and a number of other industries.

Electrofilm CORP.

7116 Laurel Canyon Blvd No. Hollywood, Cal.

BREVITY—Identify by IEN - 4788 if you write the maker

Eliminates FOGGING and STEAMING of Eyeglasses and Goggles — Glass or Plastic —

K-LENS-M *Anti-Fogging* LIQUID

Make your own test—Order a sample bottle of K-LENS-M Anti-Fogging Liquid complete with spray pump. $2.00 postpaid.

Easily applied, K-LENS-M Anti-Fogging Liquid forms an invisible coating that resists formation of fog or moisture on lens surfaces... brings clear vision to eyeglass wearers under severe conditions of hot steaming vapors, freezing temperatures, humid summer heat, or body perspiration . . . overcomes hazards of fogged goggles . . . increases worker efficiency and safety.

K-LENS-M Modern Liquid Lens Cleaner for Glass or Plastic

Thoroughly cleans glass or plastic eyewear — without scratching, streaking, or leaving a film. Does the job faster, at lower cost. Used in hundreds of plants. In Cabinet Bottles, Pints, and Gallons.

Remember K-LENS-M for Clear Vision

K-LENS-M Dispenser Cabinet With Anti-Fogging Station

COMPLETE LENS CLEANING UNIT

Holds large bottle of K-LENS-M Lens Cleaner. Dispenses Tissues, one at a time. Has Dispenser Space for used Tissues. Attachment holds a bottle of K-LENS-M Anti-Fogging Liquid. All metal. Baked Enamel Finish. Built-in Lock. Compact size for plant and office.

THE WILKINS CO. INCORPORATED

Cortland 24, N. Y. Easy to INSTALL — USE — SERVICE

BREVITY—Identify by IEN - 4789 If you write the maker

This new FREE booklet tells how two new types of Oakite-developed solvent detergents make it easier and cheaper for you to do many difficult metal-cleaning jobs. Here are some of the subjects covered in the booklet:

- Cleaning metal between processing operations
- Precleaning before painting or plating
- Stripping paint
- Providing temporary protection against rust
- How to use Oakite solvent detergents:
  - Spray-washing machine method
  - Spray-rinse method
  - Soak-tank method
  - Manual method

FREE For a copy of this 24-page booklet (illustrated with photographs and diagrams), write Oakite Products, Inc., 16A Thames St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

BREVITY—Identify by IEN - 4790 If you write the maker

NEW PRINCIPLE of GUIDEROL ...solves your TOUGHER bearing problems

The McGill GUIDEROL Roller Bearing is especially designed to take advantage of the greater capacity of cageless roller bearings — without the danger of roller skewing. This new principle of construction features guided rollers that overcome skewing tendencies and eliminate the need for space wasting cages and excess internal looseness. Load capacity in cylindrical roller bearings is not only increased with Guiderol Bearings but this advantage is effectively applied to faster and more precision applications — not before possible with full type cylindrical roller bearings. You will profit by investigating these and many other advantages of Guiderol Roller Bearings.

GUIDED ROLLERS PREVENT SKEWING—BINDING

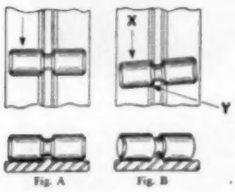


Fig. A Fig. B

A guide rail on the inside diameter of the outer race maintains roller alignment. Normally no correction is required. Should misalignment cause tendency to skew, the guide rail touches grooved rollers back into position by momentary contact at Y. X indicates direction of roller rotation.

Bulletin GB-50 lists proposed standard sizes in CT Series (interchangeable with cylindrical type dimensions) and FT Series (interchangeable with ordinary needle type dimensions). Write McGill Manufacturing Co., Inc., 109 N. Lafayette St., Valparaiso, Indiana for your copy.

McGILL PRECISION BEARINGS

BREVITY—Identify by IEN - 4792 If you write the maker

ELEVATOR . . Hydraulic ramp levels platform with a truck floor

Source: GLOBE HOIST CO.
Queen St. & E. Mermaid Lane, Philadelphia 18, Pa.

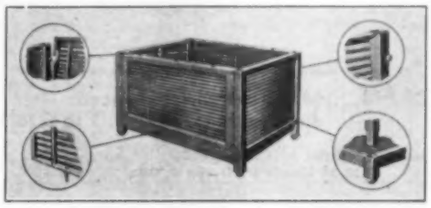
Load capacity is 10 ton and the two platform sizes in this new self-leveling ramp measure 5 by 6 ft. and 6½ by 8 feet. Both are faced with ¼-in. checkered steel plate and are provided with a fixed lip along the outer edge that can be lowered to rest on a truck floor. Thus the ramp can travel up and down as the truck is unloaded or loaded. Maximum vertical travel at the end is 24 inches.

Four designs are available in the line with reference to application of power. One employs direct air pressure to the power cylinder at about 50 lb. with control by a 3-way valve. The second applies air pressure in an oil-filled tank and controls movement by a valve in the oil line to hold the ramp under positive control in both upward and downward movement. The third includes a motor-driven hydraulic pump and control lever which operates the motor-circuit switch and also opens the lowering valve. The fourth is a multiple installation with motor-driven pump for two or more ramps to be supplied with power from a single central unit.

BREVITY—Identify by IEN - 4793 If you write the maker

HANDLING . . Demountable steel box stores and handles materials and parts

Source: JERVIS B. WEBB CO.
8933 Alpine Ave., Detroit 4, Mich.



Hazen Knock-Down box is a new assembly of base and demountable ends and sides for use as a single enclosed unit, as one with an open side, or one in more than single-panel height to meet a given load-handling requirement. The sides and ends can be removed and all parts stacked flat for storage in a small space. Bases can be placed on top of single boxes or between tiers of boxes to make storage bins.

Two basic sizes measure 40 by 48 in. and 39 by 54 inches. Both are 31½ in. in height outside. Load-carrying depth is 25 inches. Load-carrying capacity is 4,000 pounds. Weights are 280 and 300 pounds.

Bulletin, "Hazen Knock-Down Materials Handling Box", 6 pages, assembles illustrations of the box in its various forms, shows typical applications, provides dimensions, specifications.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4794 If you write the maker

Expanding? . . . then by all means investigate the versatile new truck-mounted BANTAM CRANE. Saves thousands of dollars over cost of fixed structures . . . GOES ANYWHERE in a hurry . . . lifts up to 10,000 lbs. . . . handles 50' boom, 29" magnet, with fast-change ⅜ cu. yd. (and larger) loading buckets. Gives complete flexibility of application for full or part-time work, with high resale or rental value when no longer needed. Write Schield Bantam Co., 254 Park St., Waverly, Iowa. SB-1-3S

SCHIELD BANTAM *Costs less . . . goes anywhere fast* GETS MORE JOBS DONE

BREVITY—Identify by IEN - 4795 If you write the maker

ROCKFORD CLUTCHES

BREVITY—Identify by IEN - 4796 If you write the maker

An excellent way to cope with the dwindling labor supply is to use conveyors to aid workers in moving materials. All man hours thus saved can then be used on productive operations. You have available a complete line of MHS Pre-engineered Conveyors for handling packages, parts between manufacturing processes, progressive assembly, inspection, order make-up and into or out of storage.

All component conveyor parts are simplified and standardized—mass produced for maximum manufacturing economy. They are capable of an unlimited number of combinations to meet any specific set of requirements. Thus you may have the advantages of a custom-built conveyor without the engineering expense or without any delay for designing.

Write for Bulletin PE 1 on MHS Pre-engineered Conveyors

Mechanical Handling Systems, Inc. MHS
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities

BREVITY—Identify by IEN - 4797 If you write the maker

BREVITY—Identify by IEN - 4798 if you write the maker

SYNTRON

SHAFT SEALS

FOR PUMPS • COMPRESSORS • TURBINES
ENGINES • MIXERS • MACHINES
PROPELLER SHAFTS
ETC.

Provide Positive Long-Life Sealing of Gases and Liquids

Self-contained, self-lubricating, easy-to-install units that provide fully automatic sealing action.

Standard seals eliminate leakage of air, water, gases, petroleum products, etc., and withstand temperatures from 10°F. to 200°F. and pressures to 250 psi. Special seals for corrosive and abrasive liquids.

Write for Descriptive Folder

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 4799 if you write the maker

This is it!

This cross-section tells it's own story of how to save money on production drilling

Meyco Carbide Inserted Drill Jig Bushings

MEYCO bushings combine the best features of steel and carbide . . . the protection of steel with the long life of carbide at the points of wear. First cost: higher; end result: substantial savings in production costs. Made to ASA standards . . . MEYCO bushings will SAVE you money. Don't miss *this* bet! Many sizes now available from stock.

User Says:

"We have a jig setup where four holes are held to a limit of plus or minus .0005" on the spacing. MEYCO bushings were put into service . . . and, after completing 150,000 parts, the bushings show no appreciable wear."

Write for bushing catalog No. 18, for further details and a price list.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

BREVITY—Identify by IEN - 4800 if you write the maker

GREATER VERSATILITY

ROCKWOOD
TRIPLE ACTION
SG-48
WaterFOG NOZZLE

Discharges:
1. High Velocity WaterFOG
2. Straight Stream
3. Low Velocity WaterFOG

Will out-perform any other fog nozzle operating on either high or low pressures for all around fire fighting purposes. Extinguishes fires in flammable liquids and ordinary combustibles faster and with less water. Designed for use in industrial plants, chemical plants, oil refineries, mercantile and public buildings and municipal fire departments, etc. Operates efficiently on 30 p.s.i. at the nozzle.

Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories.

Write for bulletin C-501R

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 4801 if you write the maker

SCREW DRIVING . . Magnetic socket to drive nuts and self-tapping screws

Source: SNAP-ON TOOLS CORP.
8030 28th Ave., Kenosha, Wis.

Fifteen sizes with hexagon openings and ¼, ⅜ and ½-inch square drives are included in a new line of magnetic sockets for use with hexagon-head nuts, bolts and self-tapping screws. Seven hexagon sizes are between ¼ and ½ in. with ¼-in. square drive. Four sizes range from 5/16 to ½ in. with ⅜-in. square drive and four additional sizes are between ⅜ and 9/16 in. with ½-in. square drive. An Alnico permanent magnet is imbedded in each socket to hold the flat-head screws for initial insertion and for threading start.

BREVITY—Identify by IEN - 4802 if you write the maker

HARD FACING . . Welding rod for equipment parts subject to wear

Source: ALLOY RODS CO.
6505 W. Market St., York, Pa.

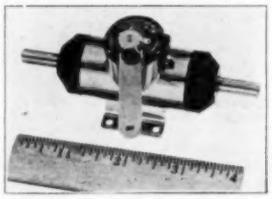
Hardness tests
56-58 Rockwell C

Wear-Flame "40" is a new centrifugally-cast hard-facing rod for application by an oxy-acetylene torch on equipment parts subject to medium impact and high abrasion. Agricultural tools, cement-pump screws, mill hammers, steel-mill dies, conveyor screws are typical. The rod consists of wear-resisting chromium-carbide contained in a hard iron-chromium-manganese alloy matrix. From 28 to 30 sq. in. can be covered to ⅛ in. in depth per pound of the rod. It is available in ⅛ to ⅜ in. diameters and to 14 in. length. A standard package contains 10 pounds.

BREVITY—Identify by IEN - 4803 if you write the maker

DRIVE . . Miniature variable speed, disc and roller design, 1 to 6 to 1

Source: METRON INSTRUMENT CO.
430-34 Lincoln St., Denver 9, Colo.



Lever adjustment has been added to the company's miniature variable-speed drive, previously described IEN-6010-49. The new assembly is known as Type 4B. It rates to 2 in. lb. of torque, .025 hp., and is suited for speeds to 20,000 rpm.

Speed adjustment upon moving the lever on the housing top results from changing the radius at which the internal rollers make contact with the disc. A pointer indicates ratio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4804 if you write the maker

IT'S ALLIED FOR CHICAGO Transformers for Industry

Famous Sealed-in-Steel Transformer Units
- Power Transformers
- Bias Transformers
- Filament Transformers
- Filter Reactors
- Audio Transformers
- JAN-T-27 Transformers

Power Circuit Units
Step-Down Units

FREE Catalog

Expert Industrial Service

We specialize in the supply of famous CHICAGO Sealed-in-Steel Transformers for every electronic application. Our large stocks include three types of constructions: hermetically-sealed JAN-T-27 units, semi-sealed, and compound sealed units. Most types are available for immediate shipment from stock. You can depend on ALLIED to save you time, effort and money on your transformer requirements. Make ALLIED your central supply source for *all* electronic supplies—special tubes, parts, test instruments, tools, audio amplifiers, accessories—available quickly from the world's largest stocks.

See your ALLIED Catalog for complete listings of CHICAGO transformers. Keep this 212-page book handy—it's the one complete up-to-date guide to the world's largest stocks of electronic supplies for industrial use. If you haven't the latest ALLIED Catalog, write for your free copy today.

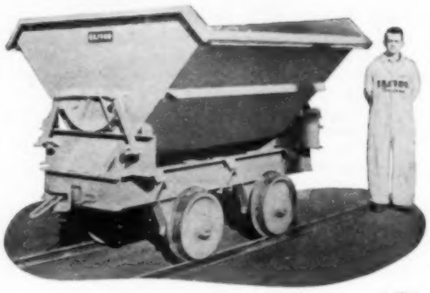
ALLIED RADIO
833 W. Jackson Blvd., Dept. 14-E-1
Chicago 7, Illinois

Everything in Electronics from ONE Source

BREVITY—Identify by IEN - 4805 if you write the maker

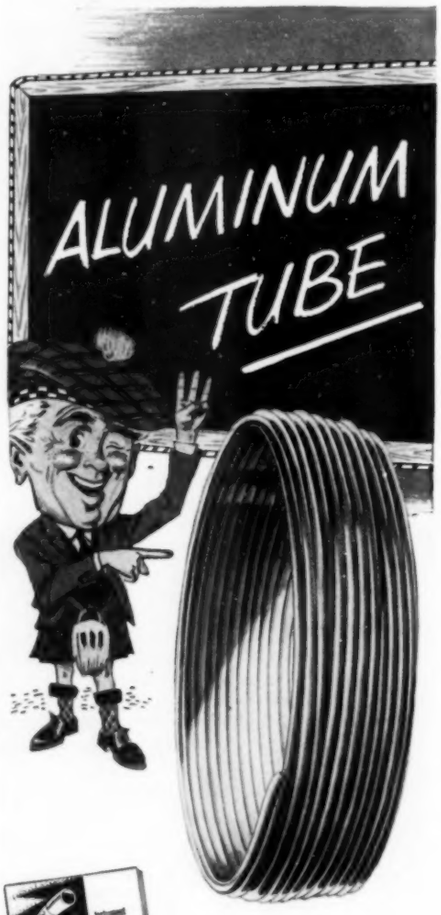
EASTON

a dependable design and construction service in industrial cars



EASTON CAR & CONSTRUCTION CO. • EASTON, PA.
NEW YORK • PHILADELPHIA • PITTSBURGH

BREVITY—Identify by IEN - 4806 if you write the maker



Write now for Alcoa's new book "Instrument Lines of Alcoa Aluminum" . . . illustrated and crammed with facts! Address: ALUMINUM COMPANY OF AMERICA, 836E Gulf Building, Pittsburgh 19, Penna.

Aluminum tube fittings are made by nationally known manufacturers

ALCOA

BREVITY—Identify by IEN - 4808 If you write the maker

It's Half the Work and Twice As Easy—the AMF LOAD-BINDER

Check these features
Ratchet-type operation
No kickbacks
One man operation
Binds load easily
Small, compact

Write today for more information

American FORGE AND MANUFACTURING CO.
812 Shore Avenue • Pittsburgh 12, Pa.

BREVITY—Identify by IEN - 4809 If you write the maker

A pound of Aluminum weighs the same as a pound of any other metal, BUT MAKES THREE TIMES AS MUCH TUBE. That's why it pays you to figure the cost of tubing installations per foot. You'll find that the initial cost is as much as 40% less than other corrosion-resistant tube. And—lightweight Alcoa Aluminum Tube is easy to form, flare and handle.

Where vibration is a factor, ask for 4S alloy. Where vibration is not a factor, ask for 3S alloy.

See your nearby Alcoa Distributor for help with your tubing problems. He's listed under "aluminum" in your classified telephone directory.

NOTE: Due to rearmament, aluminum is not available for unrestricted industrial use. However, when tubing is used, extensive engineering and planning may be required, and this advertisement is intended as an aid to your planning.

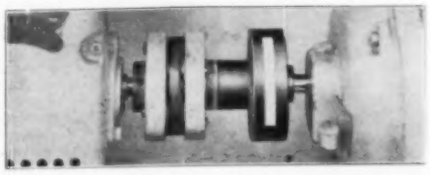
Coiled Tube ALUMINUM

ALCOA ALUMINUM

BREVITY—Identify by IEN - 4811 If you write the maker

DRIVE . . Flexible coupling and mercury clutch, rating to 15 hp.

Source: MERCURY CLUTCH DIVISION
1203 Camden Ave., S. W., Canton 6, Ohio



Series E clutch coupling designates a new combination of flexible shaft coupling and the company's centrifugal mercury clutch. The combination is available in motor ratings from ¼ to 10 hp. at 1,200 rpm. with shaft diameters measuring ¾ to 1⅝ inches. It is available for 1,500 rpm. in ratings from ¾ to 15 hp. and at 1,800 rpm. from 1½ to 15 hp. ratings.

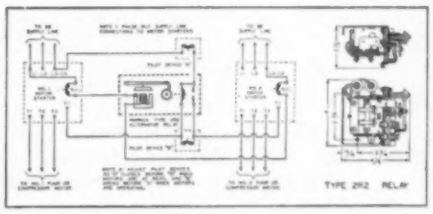
The clutch employs a small amount of mercury enclosed in its housing to displace inward a multiple set of driving segments under the action of centrifugal force. This throws the mercury to the outside of the lighter segments except when the clutch is idle. Then the mercury seeks a level at the bottom of the housing.

The segments operate in connection with a friction lining that transmits drive from one side to the other. Overall dimensions range from 4⅝ to 7⅝ in. in greatest diameter measured over the clutch housing. The combination permits drive between a motor and a machine without the need to maintain exact alignment.

BREVITY—Identify by IEN - 4812 If you write the maker

RELAY . . Alternates control of two circuits to duplicate equipment

Source: CHARLES F. WARRICK CO.
16249-53 Hamilton Ave., Detroit 3, Mich.



Type 2R2 is a new relay to maintain alternate operation of twin installations of equipment, such as pumps or compressors, in which float or pressure switches or other types of pilot devices are employed in the driving-motor circuits. Increase in load to the point where one equipment unit is unable to meet demand results in starting the second unit to assist the first until normal shut-off level or pressure is obtained in the installation.

The relay is available in open or enclosed design. It employs ¼-in. silver contacts. Overall dimensions are 4⅛ by 2½ by 4 inches. Each motor starter in an installation requires an auxiliary normally-closed contact element wired in series with the alternator relay coil, or a control combination can be specified to consist of the alternator relay and two auxiliary relays mounted in a single metal enclosure.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

BREVITY—Identify by IEN - 4813 If you write the maker

Assemblies Stay Tight —

—with PALNUT Double-Locking Action

• When tightened, spring tension (A-A) is exerted upward on the screw thread and downward on the part, while spring tension (B-B) is exerted inward to grip screw thread like a chuck.

For quick, secure fastening at low cost!

THE PALNUT COMPANY
10 Cordier St., Irvington 11, N. J.

PALNUT
SELF-LOCKING NUTS AND FASTENERS

BREVITY—Identify by IEN - 4814 If you write the maker

space saving HV FILTER has longer life greater efficiency

today's best buy is better air!

AAF's new High Velocity filter handles the same air volume in ⅓ the space of standard unit filters. It operates effectively at velocities from 300 to 500 fpm and maintains uniform efficiency over this wide range of velocities. It's the exclusive *pyramid pocket* filtering media that makes the difference!

The H-V's low resistance, large dust capacity and longer life make it a superior unit for limited space conditions.

Available in all standard sizes and 1", 2" and 4" depths. Engineering Bulletin #203 gives complete information and technical data. Write for it today.

AAF American Air Filter COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
In Canada: Darling Bros., Ltd., Montreal, P. Q.

BREVITY—Identify by IEN - 4815 If you write the maker

LIKES EASY KNIFE ADJUSTMENT

This shear cuts mild steel, stainless steel, brass, etc., of 28 gauge to ¾ inch thick in the shop of a perforated metal manufacturer. They like the easy knife adjustment because it enables making sharp, clean cuts without burrs. This is only one of many features that make Steelweld Shears outstanding. A complete line of machines is available for all size plates.

STEELWELD Pivoted Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO
4229 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

BREVITY—Identify by IEN - 4816 If you write the maker

Ramps Tilt to Meet Truck Body. Standard Wayne Platform Lift

Cut Costs WITH WAYNE LOADING DOCK LIFTS

YOU CAN save time and money with Wayne Hydraulic Leveling Ramps to adjust the level of the loading dock to the truck height. Material on skids can be directly transported into the truck body over a level path. A variance of as much as 20 inches in the height of truck bodies may be instantly adjusted by merely turning a valve. Users say: "Cuts Loading time in half." . . . "As good as doubling dock facilities." Send for illustrated folder now.

THE WAYNE PUMP COMPANY
531 Tecumseh Street, Fort Wayne 4, Indiana

NATIONWIDE SERVICE

BREVITY—Identify by IEN - 4817 If you write the maker

Four Sizes
28 inches wide x 4, 5, 6 or 7 ft. long. Top 2" thick.

865

HERE'S WHY: Heavily ribbed, smoothly machined cast-iron top provides a "surface plate" . . . Table equipped with lock-leveling screws . . . Steel shelf in sturdy steel welded base . . . Steel tool box shelf, guard rail, and drawer with lock . . . Vise and individual light can be easily attached . . . Bench is portable. Write for details.

THE CHALLENGE MACHINERY CO.

Office, Factories, Show Room — Challenge — *Grand Haven, Michigan*

BREVITY—Identify by IEN - 4818 If you write the maker

- ELIMINATES THREADING
- PERMITS DEFLECTION
- SIMPLIFIES ASSEMBLY

Dresser Style 65 Fittings make permanently flexible-tight joints on plain-end pipe—quickly and without exact pipe fitting. They permit deflection up to 6° . . . stay tight despite vibration. Just stab on and tighten. For pipe from ⅜" to 2" diameter. Write for STYLE 65 CATALOG.

Complete line of tees, elbows, adapters, branch tees, etc.

DRESSER "NO-THREAD" FITTINGS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco.

BREVITY—Identify by IEN - 4819 If you write the maker

DESIGNING FOR DEFENSE?

GET ENGINEERING DATA ON

SYNCHRON
TRADE MARK

TIMING MOTORS - TIMING MACHINES
CLOCK MOVEMENTS - D. C. MOTORS

SYNCHRON synchronous motors meet your requirements for compact power. Pulls up to 8 oz. direct load continuously at 1 R.P.M. Gear trains can be furnished to convert to any speed. Unusual actions can be incorporated in movement. Our engineers will be glad to work with you in developing motors for special applications.

Hansen D.C. motors powered servo units which won Army-Navy E. Used also in aircraft instruments and radio control mechanisms.

HANSEN MANUFACTURING CO. INC. PRINCETON, INDIANA

Please send SYNCHRON engineering data.

NAME .....

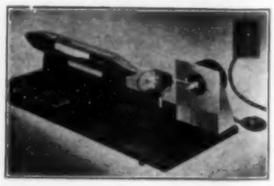
FIRM ..... STREET .....

CITY ..... STATE .....

BREVITY—Identify by IEN - 4820 If you write the maker

TESTING . . Tension gage for yarn issuing from a shuttle

Source: SAXL INSTRUMENT CO.
10 Depot Road, Harvard, Mass.



Shuttle Tester is a new unit by which tension is indicated in yarn issuing from a shuttle so adjustment can be made under conditions equivalent to those in actual operation. A shuttle with a quill in position is placed on the stand to the left and the yarn is threaded through the rollers of the mounted meter to the shank extension of a small motor on the right. When the motor is started, the yarn issues from the shuttle and its tension is indicated on the dial. Any required adjustment then is made at the shuttle for desired operating tension.

BREVITY—Identify by IEN - 4821 If you write the maker

CORROSION PROOFING . . Plastic is sprayed to protect metal surfaces

Source: UNITED STATES RUBBER CO.
1230-32 Sixth Ave., New York 20, N. Y.

Now available in limited quantity

U. S. Royalguard trade names new air-drying plastic for spray application to protect metals against corrosion. It is suitable also for use on concrete, composition materials, wood, to insulate against attack by corrosive chemicals in the form of liquids, gases or in suspension in the atmosphere.

Drying takes place in about an hour and successive coats are applied at 24-hr. intervals to build up a desired thickness. The coating that results remains flexible, can be repaired in case it is damaged by "touching up" with a brush or spray. The material will not chip or crack. It does impart a slight odor and taste to fluids or products coming in contact with it. Metal should be sand-blasted before the first coating is applied. Cement should be etched with hydrochloric acid. Wood and composition board require rough sanding.

BREVITY—Identify by IEN - 4822 If you write the maker

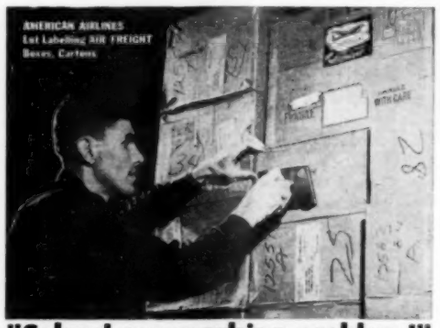
RHEOSTAT . . Variable potentiometer for use as a resistance substitute

Source: CHICAGO INDUSTRIAL INSTRUMENT CO.
534-38 W. Elm St., Chicago 10, Ill.

Selectohm is a new 0 to 100,000-ohm linear potentiometer. It provides a quick means to determine the values of blackened burned-out resistors when it is substituted in electronic circuits. It applies in laboratory work to act as a decade box. It serves as a precision rheostat, shunt or multiplier. Rating is 25 watts. List price is $7.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

BREVITY—Identify by IEN - 4823 If you write the maker



"Solved our marking problem!" say users everywhere

"The *MULTISTAMP* Hand Stamp Stencil Duplicator is the best thing we've seen for shipping tag and label addressing" . . "for marking boxes, cartons, packages." Quick, clean, accurate, easy-to-use. Prints 1000 or more clear, sharp copies from *one stencil . . one inking*. Just type, write, trace or draw on low-cost stencil, snap in position and print . . like using a rubber-stamp. Non-mechanical, of non-corrosive metal. No moving parts, has replaceable ink pads. 8 complete outfits, $9.50 to $99.50.

IT PRINTS ON
POSTCARDS SHIPPING TAGS
BOXES CARTONS
LABELS PACKAGES

At Your Office or Shipping Room Supply Dealer

MULTISTAMP
STENCIL DUPLICATOR

MANUFACTURED ONLY BY THE MULTISTAMP CO., INC. NORFOLK, VIRGINIA

BREVITY—Identify by IEN - 4824 If you write the maker

From Air Conditioning To Atomic Research

THESE SMALL SWITCHES ARE DOING A BIG JOB

Series 240 Rotary Switches

. . . now available in over 30 circuit variations for heater, motor and low-voltage A.C. electronic applications

Brand new only a few months ago, today in dozens of products, both civilian and defense, Series 240 Switches are proving the value of their exclusive combination of features:

- *Compactness* — unmatched by any comparable switch: base only 1½" high, 1⅛" wide, 1" deep. Available in single hole mounting and bezel equipped models. Latter snaps into mounting hole for fast assembly with spring clips holding it firm.
- *Heat Resistance* — completely efficient operation with ambient temperatures up to 400° F.
- *Entirely Enclosed* — for safety, and protection of working parts.
- *High Overload Capacity* — ratings are conservative: 7½ A, 240 V; 15 A, 120 V; 25 A, 120-240 V; 1 H.P., 120 V; 2 H.P., 240 V. A.C. only. Underwriters' Laboratories Approved.
- *Peak Performance and Long Service Life* — thanks to ingeniously simple design, rugged construction, heavy silver contacts and long recognized "Diamond H" slow-break principle.

Write today for complete details on how Series 240 Switches will meet your needs.

THE HART MANUFACTURING COMPANY
203 BARTHOLOMEW AVENUE, HARTFORD, CONNECTICUT

BREVITY—Identify by IEN - 4825 If you write the maker

What's U. S. Rubber doing for electrical design?

Transformer handle of Enrup for a large manufacturer of electrical equipment. Enrup was selected because its electrical properties can be maintained under very adverse conditions, and because it has great toughness, impact strength, and resistance to other solvents.

The horizons of electrical design are being widened by U.S. Rubber's new thermosetting plastic, Enrup. The transformer handle shown here has greater strength and electrical properties because it is made of Enrup.

This remarkably versatile substance can be punched, sanded, sawed, nailed, bolted, molded or machined. Enrup can be made into almost any shape or form, simple or complex. It may be exactly what you have been looking for to make your product stronger, more efficient, less expensive.

Enrup is fabricated and molded entirely by U.S. Rubber engineers. They will gladly discuss your particular problems. Write to address below.

PRODUCT OF
U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

▼ BREVITY—Identify by IEN - 4827 If you write the maker ▼

NO ONE SPEED REDUCER SOLVES EVERY REDUCTION PROBLEM

That's why LINK-BELT builds all 3

Helical Gear Drives Book 2247 | Herringbone Gear Drives Book 2419 | Worm Gear Drives Book 2324

All these books are available to you. Write for copies.

LINK-BELT

LINK-BELT COMPANY Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Houston 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8, Johannesburg. Offices, Factory Branch Stores and Distributors in Principal Cities.

▼ BREVITY—Identify by IEN - 4828 If you write the maker ▼

Kimpak Float Packaging*

Cuts shipping costs—reduces damage in transit!

Do you handle your product with extreme care during the manufacturing process—then trust it to outmoded, inferior quality cushioning materials after it leaves your shipping room? You may not be able to answer that question if you haven't seen KIMPAK* Float Packaging at work.

It's the modern way to ship anything from delicate glassware to furniture and appliances; from tools and hardware to flowers and food. It's also one of the most efficient packaging methods in the world—giving optimum protection at minimum cost.

KIMPAK creped wadding is as neat, clean and easy to apply as wrapping paper. It's designed to absorb continuous vibration, ward off severe shocks, cushion and defend your product against roughest handling. This highly efficient cushioning material protects the finest finish from scratching, bruising, pressmarking and "burning."

Call your KIMPAK distributor today for further information, or write to Dept. IEN, Kimberly-Clark Corporation, Neenah, Wisconsin.

Kimpak

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

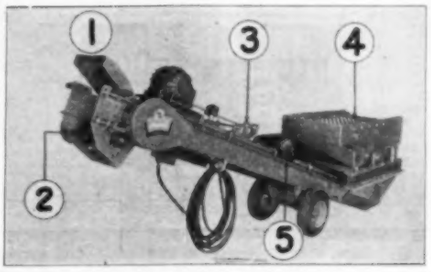
CREPED WADDING

*REG. U. S. PAT. OFF. & FOREIGN COUNTRIES

▼ BREVITY—Identify by IEN - 4830 If you write the maker ▼

FOUNDRIES . . Sand conditioner shakes, separates, aerates, delivers

Source: NEWAYGO ENGINEERING CO. 51 Newaygo St., Newaygo, Mich.



Poured molds measuring to 20 by 30 in. can be dumped on the shake-out deck in this new portable Reidy Sandy wheel-mounted machine. It will handle 12 ton of sand per hour. Sand is separated from the castings on the shake-out deck 4. Cores and sand drop into a vibrating screen where tramp iron and core butts are removed. The sand then travels on the belt conveyor past an optional magnetic separator 5 where small metal particles are removed. It continues from there beneath a tempering device 3 that adds water. Discharge is at the end where a built-in aerator at 1 and 2 blends in the water, fluffs the sand and cools it.

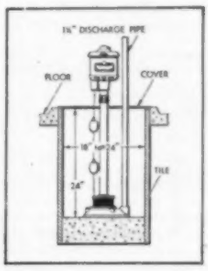
The machine measures 3 by 11 ft. in width and length. It is equipped with a 50 ft. electric extension cord and plug for connection to a suitable power source.

The machine is a companion unit to the Handy Sandy elevator-aerator, previously described IEN-10727-49. When the two are used together the new unit delivers into the elevator booth which then lifts the sand to an overhead hopper for delivery by gravity to a molding floor.

▼ BREVITY—Identify by IEN - 4831 If you write the maker ▼

PUMP . . Motor driven centrifugal for sump duty, 22½ gpm. against 20 ft.

Source: PEERLESS PUMP DIVISION West Ave. 26 & Humboldt St., Los Angeles 31, Calif.



Open impeller in this new Type CDR-2 centrifugal pump is connected by a stainless-steel shaft to a ½-hp. single-phase 110-volt 60-cycle ac. motor. The shaft measures ½ in. in diameter and rotates in an oil-impregnated bearing. The pump base, the volute and the impeller are made of bronze. Intake is through a brass screen with top suction that assures continuing prime.

Control is by means of two positive-displacement weights suspended from the operating switch. The weights can be adjusted for variable limits of level control. The brass standpipe that encloses the drive shaft positions the motor above a cover plate over a sump 24 in. in depth. Discharge is through a 1¼-in. connection. Height of the assembly is 37 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

▼ BREVITY—Identify by IEN - 4832 If you write the maker ▼

IRON FIREMAN COMMERCIAL GAS BURNERS

Ideal for quick, low-cost change over

Iron Fireman commercial gas burners are noted for their dependable operation and low gas consumption. These burners, designed particularly for capacities up to 400 boiler horsepower, are very flexible in operation and easily installed—*without costly alterations.*

The Vertical type burner, shown above, provides either manual or automatic control of burner heads in sections. It permits regulation of firing rate in proportion to heat requirements and thereby assures greater fuel economy.

The Iron Fireman Inshot type burner burns with a soft radiant flame. Two impinging jets behind each air port provide greater fuel and air entrainment. A wide range of sizes is available in these and other Iron Fireman gas burners.

Write for complete information and specification charts

IRON FIREMAN MANUFACTURING COMPANY

3168 WEST 106TH STREET CLEVELAND 11, OHIO

▼ BREVITY—Identify by IEN - 4833 If you write the maker ▼

Operate at Full Voltage with ALLIS-CHALMERS *Dry-Type* TRANSFORMERS

MAXIMUM EFFICIENCY is obtained when motors and other equipment are operated at rated voltage. Allis-Chalmers dry-type transformers installed close to the load provide full voltage for efficient motor operation, bright, flicker-free lights, and full heating of thermal equipment. Long expensive runs of secondary copper are avoided, and distribution losses are minimized.

Transformers are easy to mount. Install them on walls, platforms, posts or directly on machines. No expensive fire-proof vaults are needed. Available in a wide range of sizes.

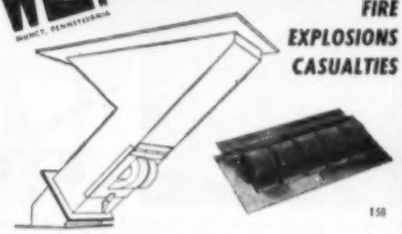
Write Allis-Chalmers, Milwaukee 1, Wisconsin, for bulletin 61B6382A. A-3253

ALLIS-CHALMERS

▼ BREVITY—Identify by IEN - 4834 If you write the maker ▼

SPROUT WALDRON S/W MUNCY, PENNSYLVANIA

MAGNETIC SEPARATORS GUARD AGAINST BREAKDOWNS FIRE EXPLOSIONS CASUALTIES



Tramp metal in chemicals, fertilizers, plastics, food products, etc., can cause costly breakdowns, fires or explosions and lawsuits arising from casualties due to harmful metal particles in finished products. S/W "Lifetime" Magnetic Separators, available for immediate delivery in 12 standard sizes, provide low cost protection against such hazards. Write today for literature. Sprout-Waldron & Co., Inc., 5 Waldron Street, Muncy, Penna.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

▼ BREVITY—Identify by IEN - 4835 If you write the maker ▼

Indispensable . . .

when converting part of plant to war production

HEIN-WERNER HYDRAULIC JACKS

. . . make lifting and pushing jobs easier

Hein-Werner HYDRAULIC JACKS

Made in models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100 tons capacity. Hein-Werner also makes "Push and Pull" Hydraulic Jacks of 4, 10, 20 tons capacity. See your industrial supply distributor, or write us.

HEIN-WERNER CORPORATION • WAUKESHA • WIS.

BREVITY—Identify by IEN - 4836 if you write the maker

A TOOL BOX AT YOUR FINGERTIPS

INTERCHANGEABLE COUNTERBORE SETS

Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin D27161. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

CTW

BREVITY—Identify by IEN - 4837 if you write the maker

Fast, Safe PACKING
FOR MILITARY MATERIEL

Now available for efficient, cost-saving packing of shells, cartridges, fuses and other military material, are American pre-assembled interlocking partitions made to meet government specifications.

Wire for prices on your requirements. Volume production facilities.

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Western Representative: Seaman Haynes Co. — Ebbrook 2-3244
Merchants Exchange Building, San Francisco 4, Calif.
Midwest Sales Representative:
742-73 Milwaukee Ave., Chicago 22, Ill. — Monroe 6-7612

BREVITY—Identify by IEN - 4838 if you write the maker

MM MINNEAPOLIS MOLINE MODERN MACHINERY

INDUSTRIAL WHEELERS

for material handling or equipment

27 hp and 51 hp max. developed engine hp Models

Manufacturing and processing plants use Minneapolis-Moline heavy duty wheel tractors on unusual yard handling operations. A wide selection of attached tools is available for moving bulk or palletized material with small investment.

Manufacturers also use MM wheelers to mount graders, skyvedere cranes, revolving cranes, and sweepers. Specifications available on request or ask for recommendation for your product. Engineering service available.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-12

We suggest Thomas' Register as your source for information if you are engaged in securing maintenance, repair and operating supplies for your plant in line with NPA's Regulation 4. It permits such purchases now. You can use the Register to trace down clues to sources as you check your plant equipment to find the makers.

For example the trade-name section will give you a complete company name and address when all the machine shows is a cast-in name or phrase. The classified sections under the type of machine will give you a list of all the makers from which you can sort the particular ones you are looking for. Altogether you will find more helpful product-source information in the Register's four volumes than is collected in any other one place.

If you are a Register user you will know exactly what we mean. If you are not, and would like to be, just contact W. C. Scoltock, Circulation Manager, Thomas Publishing Co., 467 Eighth Ave., New York 1, N. Y. List price is $15 plus handling.

IEN ON MICROFILM — IEN S-13

For about $3.50 you can purchase the twelve issues of IEN for 1950 on microfilm. The service is available on a yearly basis through University Microfilm, 311-15 N. First St., Ann Arbor, Michigan. Each page is printed on 35-mm. film.

GOVERNMENT PROCUREMENT — IEN S-14

Here are three review references to information on procurement that may be interesting to you—

Trilane Associates Inc., 3 Hudson St., New York 13, N. Y. Bulletin, "How to Secure Government Business." IEN-10037-50.

General Services Administration, 18th & 19th Sts., Washington, D. C. "How to Sell to the Government." IEN-2439-51.

Research Institute of America, 292 Madison Ave., New York 17, N. Y. "Selling to the Armed Forces." IEN-3508-51.

U. S. SAVINGS BONDS — IEN S-15

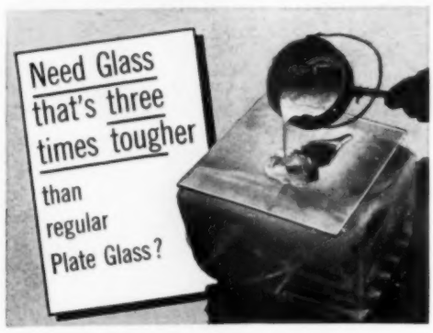
You can perform a very important service, if your plant is not now on the payroll savings plan, by contacting the Savings Bond Division, U. S. Treasury Department, Suite 700, Washington Building, Washington, D. C., or by calling your local State Director for a copy of the plan available for your use. It shows how to put all of the workers in your organization on the plan in their interests.

BUDDY POPPIES ON MEMORIAL DAY

You are helping to raise funds for needy ex-service men and their dependents when you buy a VFW Buddy Poppy during the week of Memorial Day. They are the boys who gave up their own chance in life to protect the rest of us.

BREVITY—Identify by IEN - 4839 if you write the maker

Need Glass that's three times tougher than regular Plate Glass?



Here's a glass that is three to five times stronger than plate glass in sustaining loads or resisting strain—five to seven times stronger in resisting impact—over three times as resistant to thermal shock. Imagine—no damage when molten lead is poured on it, even when it's resting on ice! This glass, strengthened by a Libbey-Owens-Ford scientific heat-treating process, is "TUF-FLEX", available in eight thicknesses, from ¼" to 1¼". Complete details in Bulletin SPD-51.

Write for your copy of this valuable booklet.

LOF GLASS
LIBBEY·OWENS·FORD GLASS COMPANY
8651 NICHOLAS BLDG.
TOLEDO 3, OHIO

BREVITY—Identify by IEN - 4840 if you write the maker

In plants which actually manufacture the acids and alkalies you use, Prufcoat has been providing positive protection against costly corrosion for over 10 years now . . . on *concrete floors, walls, ceilings, structural steel, tanks and other equipment.* Write for Prufcoat literature.

Where Acids or Alkalies Destroy Prufcoat PROTECTS

NOW!
A WHITE ENAMEL THAT STAYS WHITE

Write today for folder on Prufcoat BX White Enamel—the acid and alkali resistant white coating that stays white, inside or outside. Can be applied to moist surfaces.

Prufcoat Laboratories, Inc.
50 East 42nd Street
New York 17, N.Y.

Preventive Maintenance PAYS!

BREVITY—Identify by IEN - 4841 if you write the maker

"COMMERCIAL"

Purchasing agents and designers can avoid costly tools and dies by getting a Commercial "Shape Book".

This Booklet shows a number of circular shapes that can be economically used in designs in various articles, and will show a reduction in costs, make easier assembly but increase the mechanical advantages.

Write for the Shape Book — no tool or die charges for these standard shapes.

THE COMMERCIAL SHEARING & STAMPING CO.
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BREVITY—Identify by IEN - 4842 if you write the maker

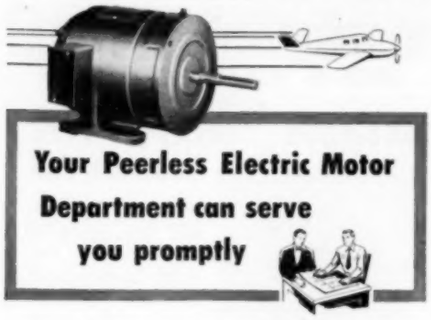
...Now!
more vital than ever!

TODAY, more than ever before, workers' welfare counts! One important instance is the installation of Halsey Taylor Coolers and Fountains at strategic locations throughout the plant, saving steps, reducing fatigue, keeping production at top peak! Get the facts

The Halsey W. Taylor Co.
Warren, Ohio

Halsey Taylor Fountains and Coolers

BREVITY—Identify by IEN - 4843 if you write the maker



• One of the finest motor engineering staffs can be your motor department when you call on Peerless Electric.

Peerless private air service—a Beechcraft Bonanza—can carry one of our sales engineers to see you on reasonably short notice, if necessary. He'll get to your problem quickly—right at your desk with your own designers—ready to work out the toughest motor problem.

Peerless Electric motor engineering, noted for dependability and versatility since 1893, is as progressive as the modern age, and now, more than ever, available as the motor department of your business.

THE PEERLESS ELECTRIC CO., WARREN, OHIO
Manufacturers of Quality Motors Since 1893
Single Phase • Polyphase • Direct Current • ¼ to 15 H.P.

Peerless Electric MOTORS·FANS·BLOWERS

BREVITY—Identify by IEN - 4844 if you write the maker

Ready power for your hand pipe tools with RIDGID

Legs, handy tool tray and fittings at slight extra cost.

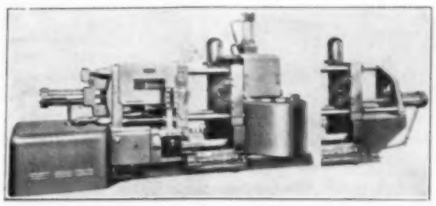
• Cut and thread more pipe faster, more easily with efficient No. 400. Lightest power unit made—one man can move it around on the job. Universal motor—forward, reverse, light socket power. RIDGID 3-jaw chuck, with chuck wrench ejector; self-centering workholder in rear turns with pipe. Sealed-in lubrication. Plenty of power, pays for itself in time and work saved in hand tool threading, cutting, reaming. Ask for the RIDGID "400" Power Drive at your Supply House.

RIDGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

BREVITY—Identify by IEN - 4846 if you write the maker

DIE CASTING . . Hydraulic machine rates 15 lb. in zinc, 9 lb. in aluminum

Source: REED-PRENTICE CORP.
675-79 Cambridge St., Worcester 4, Mass.



The metal end of this recently-improved die-casting machine takes a high-pressure gooseneck plunger attachment to cast zinc, tin and lead-base alloys. In interchangeable arrangement, it takes a high-pressure cold-chamber attachment for aluminum, magnesium and brass alloys. The same die-locking end of the machine, including the movable and stationary die plates, remains in either assembly. One is known as No. 2, the other as No. 2G. Control is centralized at a station equipped with actuating buttons for either thumb or palm operation to prevent interlocking of opposite actions. Electrical interlocks make it impossible to "shoot" the metal until the dies are closed and secured.

Operating power is supplied by a 20-hp. motor and hydraulic pump. Maximum shot capacity is 15 lb. when the machine is set up for zinc. It is 9 lb. when it is set up for aluminum. The movable die plate is provided with auxiliary support brackets that slide on ways on the one-piece fabricated-steel base. Two outlets in the stationary die plate permit locating the point of injection to suit given tooling. The melting pot for zinc on the No. 2 machine holds 1,400 lb. of metal.

BREVITY—Identify by IEN - 4847 if you write the maker

HEATING . . Induction equipment for soldering, brazing, heat treating

Source: SHERMAN INDUSTRIAL ELECTRONICS CO.
503-7 Washington Ave., Belleville 9, N. J.

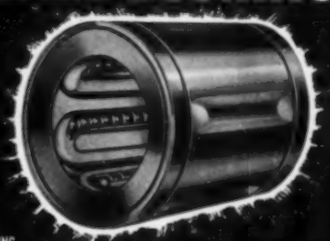
New work fixture has been developed for application on one of the company's standard electronic heating machines for use in brazing a center stud to the bottom of a brass dish. The fixture includes a steel-table base with an upright column on which a spring-loaded spindle is mounted for adjustable height. This spindle and its housing actually are the head assembly of a drilling machine positioned on the column in reverse.

Spring loading holds the spindle and the chuck at its lower end down against the work but does not necessarily revolve. The dish locates just above the heating coil which connects into the socket at the front of the machine. This coil can be changed in about ½ minute. The machine operates on 220-volt 60-cycle single-phase ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4848 if you write the maker

BALL BUSHING



The BALL BEARING for your **LINEAR MOTIONS**

Sliding linear motions are nearly always troublesome. Thousands of progressive engineers have solved this problem by application of the Precision Series A BALL BUSHINGS.

And now hundreds of original equipment manufacturers use the new cost Commercial Series B BALL BUSHINGS which were developed for support of linear motions in competitively priced, reliance manufactured products where super precision is not essential.

Alert designers can now make tremendous improvements in their products by using BALL BUSHINGS on guide rods, reciprocating shafts, push-pull actions, or for support of any mechanism that is moved or shifted in a straight line.

Improve your product. Up-date your design and engineering with BALL BUSHINGS!

LOW FRICTION • LONG LIFE
ELIMINATES BINDING and CHATTER
SOLVES SLIDING LUBRICATION PROBLEMS
LASTING ALIGNMENT • LOW MAINTENANCE

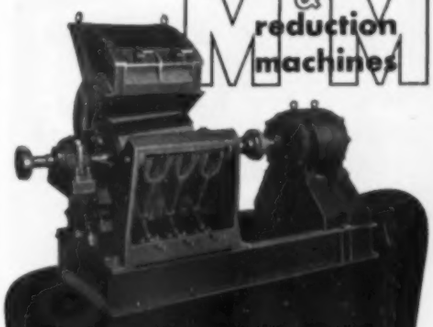
Now manufactured for ¼", ⅜", ½", ⅝", 1" and 1½" shaft diameters.

Write for descriptive literature and the name of our representative in your city.

THOMSON INDUSTRIES, INC. Dept. I
MANHASSET, NEW YORK
PROGRESSIVE MANUFACTURERS USE BALL BUSHINGS—A MAJOR IMPROVEMENT AT A MINOR COST

BREVITY—Identify by IEN - 4849 if you write the maker

M&M reduction machines



M & M Reduction Machines are rapidly gaining favor in industry for converting waste to uniform size for easy handling and in many cases into valuable by-products. Cut your disposal costs with an M & M Reduction Machine. Send us your problems.

MITTS & MERRILL
1014 South Water • SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 4850 if you write the maker

Know Your Departmental Steam Costs

HOW much are you spending on steam—for both heating and processing—in all your departments? The permanent chart record of a Taylor 1500 Mercury Flow Meter will give you the precise answer every day. And all you have to do is glance at the chart to detect any steam waste caused by "fouled up" traps or valves.

Trouble-Free Performance: (a) Submerged check valves for positive shut-off. (b) Unique damping valve adjustable under pressure without leakage. (c) Plenty of room in mercury chambers for surges or pulsating flows. (d) Teflon bearings hold pressure, give long service.

Easy Maintenance: (a) Easy to reach float and lever arm for calibration. (b) Entire pressure-tight bearing easily replaced at low cost. Ask your Taylor Field Engineer! Or write for Catalog 98175.

Taylor Instrument Companies
Rochester, N. Y., and Toronto, Canada
Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Taylor's Centennial — Accuracy First Since 1851

TAYLOR INSTRUMENTS MEAN "ACCURACY FIRST"

BREVITY—Identify by IEN - 4851 if you write the maker

Easy-handling JOHNSON general-purpose clamshell

FAST OPERATING
Big-diameter sheaves, with sealed-in needle bearings, cut friction power loss, deliver full digging power to the cutting edge.

ALL-WELDED
Smooth, fast cleaning, heavy-duty. Hard manganese cutting edge welded to lips toughens with use, assures extra long life.

LET US SHOW YOU SAVINGS ON YOUR WORK

10 SIZES
¾ - ½ - ¾ - 1 - 1¼ - 1½ - 1¾ - 2 - 2½ - 3 yds.

J143

THE C. S. **JOHNSON** COMPANY IEN
Champaign, Ill.
Send us complete facts on _____ yd. General-Purpose Clamshell.
NAME .....
TITLE .....
COMPANY .....
STREET .....
CITY ..... STATE .....
KOEHRING SUBSIDIARY

BREVITY—Identify by IEN - 4852 if you write the maker

DELTA® 17" DRILL PRESSES

- Available in popular single-spindle and multiple-spindle models, floor and bench types, with or without power-feed, with No. 2 taper or Jacobs chuck.
- 5" spindle-stroke. Capacity of ½" in steel or ¾" in cast iron.

DELTA POWER TOOL DIVISION
Rockwell Manufacturing Company

Get further facts. Send for catalog

615E E. Vienna Ave., Milwaukee 1, Wisconsin

WW-47

BREVITY—Identify by IEN - 4853 if you write the maker

B.F.Goodrich

analysis shows you *HOW* to lengthen industrial tire life

IF YOU'RE interested in this, The B. F. Goodrich Company wants to put a trained man at your service — without obligation. Your local BFG representative has been specially trained to analyze industrial tire operations and to make impartial recommendations regarding size, type, care and maintenance. These recommendations are valuable to you. In many cases, industrial tire life has been increased as much as 100%! The recommendations this tire and wheel analysis man makes are impartial and unbiased because the B. F. Goodrich line is complete (solids, semi-pneumatics, pneumatics) and comes in a wide range of sizes.

Call your B. F. Goodrich man today. Let him survey your operation . . . study loads, hauls, equipment, hauling surfaces and floors. Then let him offer his suggestions. Extra service from your industrial tires is yours for the asking.

A similar program is available for the manufacturers of industrial hauling equipment.

Write for full details of the

TIRE AND WHEEL ANALYSIS PLAN

at no obligation

The B. F. Goodrich Co.
Department TW-111
Akron, Ohio
Please give me additional information on your new Tire and Wheel Analysis plan.

Name _____
Title _____
Company _____
City _____ State _____

BREVITY—Identify by IEN - 4855 if you write the maker

TESTING . . Sonic meter reads resonant frequency in solid mass

Source: ELECTRO PRODUCTS LABORATORIES
4504B N. Ravenswood Ave., Chicago 40, Ill.

Sonometer trade names new electronic instrument consisting of a control cabinet and a portable pickup to permit measurement of resonant frequency in solid masses weighing as much as 1,500 pounds. A control is provided for a range of driving power between a fraction of a watt and the maximum 18 watts. An oscillator measures resonant frequency between 20 cycles and 22 kilocycles.

Phase relationship between the driving voltage at one end of the mass and various points within the mass can be viewed on the oscilloscope screen assembled on the housing face. Experienced operators can determine the flexural and torsional modes of vibration by observing the trace on the screen. Application can be made on materials such as aluminum, carbon electrodes, castings, ceramics, concrete, plastics, pressed materials, structural steel.

BREVITY—Identify by IEN - 4856 if you write the maker

TUMBLING . . Motor driven machine mounts transparent glass gallon jar

Source: ANDREW TECHNICAL SERVICE
3803-7 N. Clark St., Chicago 13, Ill.

Materials are mixed by tumbling action, at 55 rpm., in the glass jar of this new machine. Small parts and materials can be tumbled for various purposes. The jar is fitted with a screw cap lined with Tygon to seal against leakage and to resist corrosion. The motor is a geared-head unit. Trunnion mounting for the jar includes a handcrank to use after disengaging the motor belt.

BREVITY—Identify by IEN - 4857 if you write the maker

VALVE . . Solenoid operated for shut-off on pressure to 225 lb.

Source: AIRMATIC VALVE INC.
1643 E. 40th St., Cleveland 3, Ohio

Model LDS-2-750 is a new bronze valve with an operating solenoid for connection to an ac. or dc. line of specified voltage. The valve is available in sizes from ¼ to 2 in. to handle air, oil, water. It can be mounted in any position and can be serviced after installation without disturbing the pipe connections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 4858 if you write the maker

BREVITY—Identify by IEN - 4859 if you write the maker

BE READY FOR WARM WEATHER

IMPROVE WORKING CONDITIONS *with a*

ROBINSON "SULKEY" TYPE COOLING FAN

Put a Robinson "sulkey" type cooling fan right on the job. Roll it into position on its truck type wheels, tilt it to direct the air right where you want it.

Built in sizes from 18" to 36".

Ask for bulletin No. 8000

Place your cooling problems in our hands

ROBINSON VENTILATING COMPANY

Manufacturers of Fans and Ventilating Machinery for over fifty years.

1948 Railroad Street
ZELIENOPLE PENNSYLVANIA

BREVITY—Identify by IEN - 4860 if you write the maker

NEW...

Extremely sensitive

PRESSURE & VACUUM *Switches*

TYPE SB

The new Type SB pressure and vacuum switches are for use in applications in which close on-off differentials and absolutely consistent maintenance of cut-in and cut-out settings are essential in the control of pressure or vacuum. Available are two pressure models and two vacuum models. The Pressure Switches have adjustable ranges from 0-15 psi and adjustable on-off differential from .1" wc-10" wc. They may be furnished as calibrated, micrometer type or uncalibrated for screw driver adjustment.

Electrical ratings at 125/250 V AC between 1200 watts and pilot duty depending on differential. The Vacuum Switches offer adjustable ranges from 30"-0" hg vac with adjustable on-off differential from .1" wc-10" wc. Furnished as calibrated micrometer type or uncalibrated with screw driver adjustment. Electrical ratings of both models 1200 watts at 125/250 V AC.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

Special models available for requirements not included in the specifications above.

Write for new bulletin 4926 P giving complete details today.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 4861 if you write the maker

New Hydraulic Gang Plank

Speeds Loading 50%

No excavation required for installation.

Globe Hoist has come through with a most effective "aspirin" for your loading headaches. It is a new hydraulic ramp that speeds up loading or unloading by 50% with a corresponding cut in time and labor costs. When a truck backs up to your dock, pressure on a button raises or lowers the ramp. A sturdy "lip" rests firmly on the truck bed. The ramp is self-leveling and "rides" with the truck as the springs flex.

This latest Globe Self-Leveling Ramp operates by air, air-oil, or motor pump, and is simply bolted on a load pad, thus requiring no excavation. It is easy to install. Quickly pays for itself.

Got a Lifting Problem?

GLOBE

has the answer

Muscle is the world's most wasteful lifting power. A Globe OLIFT will do it cheaper and better.

Write today for "Modern Lifting." It is full of interesting information on Self-Leveling Ramps, Machine Loading Lifts, Industrial Truck Service Lifts, Production Lifts, etc.

GLOBE HOIST COMPANY • Philadelphia 18, Pa. • Des Moines 6, Iowa

BREVITY—Identify by IEN - 4862 if you write the maker

CUT PIPE THREADS CLEANER, BETTER, WITH LESS TIME AND LESS EFFORT

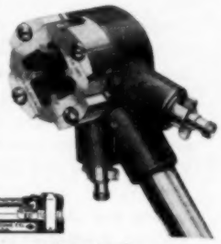
with the REED

REMOVABLE HEAD, SELF-FEEDING RATCHET THREADER

No pushing! Patented double-threaded throat leads die onto pipe.

Exclusive double-pawl ratchet cuts lost motion in half.

Positive-locking, quick-change heads will not fall out.



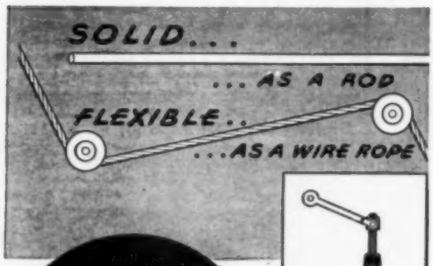
Convenient carrier supplied with sets of 3 or more heads.

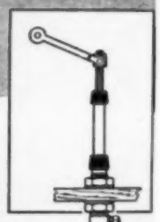
Remember — In a vise or pipe tool if it's a REED it's RIGHT

REED TRADEMARK

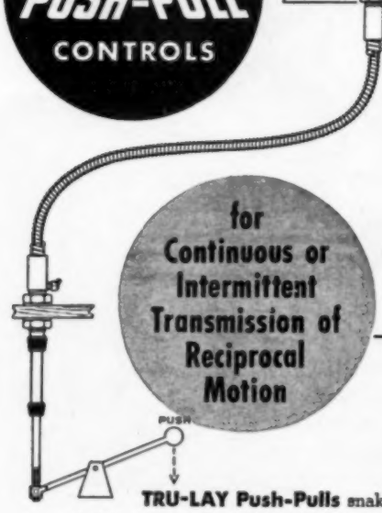
MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

BREVITY—Identify by IEN - 4863 if you write the maker





TRU-LAY PUSH-PULL CONTROLS



for Continuous or Intermittent Transmission of Reciprocal Motion

TRU-LAY Push-Pulls snake around obstructions. Provide positive remote action. Operate while flexing, as on shakers. Few or many bends. Short or long distances. Ruggedly constructed for years of service. Capacities up to 1000 pounds input. Maximum travel 4".

Write our Detroit office today for DH-287

ACCO 601 Stephenson Bldg., Detroit 2
2475 Porter St., Los Angeles 21 • Bridgeport, Conn.

AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
In Business for Your Safety

BREVITY—Identify by IEN - 4865 if you write the maker

TESTING . . Electronic meter reads moisture content in materials

Source: SEEDBURO EQUIPMENT CO.
7006 Converse Bldg., Chicago 6, Ill.

Model 400-G is new design of the company's Steinlite moisture meter. It covers a range between 1½ and 50 per cent in materials such as whole grain, seeds, nuts, feed meal, fertilizer, tobacco, food products and other commodities of consistent chemical and granular nature. Operation is on 110-volt 60-cycle ac. The assembly is in a housing that measures 17 by 9⅝ by 11⅝ inches. Weight is 37 pounds. List price is $420.

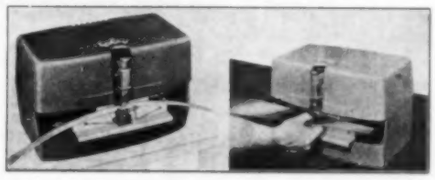
A selector dial on the top of the housing is turned to position the pointer on a meter for the start of the test and a sample of the material to be tested is weighed out on an accurate gram scale supplied by the user. The weighed sample is poured into the funnel on the housing. Then the dial selector on the housing is rotated in counter-clockwise direction to obtain a reading on the meter. This is followed by releasing the sample into a grain box in the housing and waiting one minute to read temperature on a thermometer dial.

The readings are converted to actual moisture content on conversion charts, of which 12 standard units are supplied with each instrument. Application is indicated wherever commodities are bought and sold at prices based on moisture content or wherever moisture control is a dollar-important factor in processing or storing.

BREVITY—Identify by IEN - 4866 if you write the maker

WOOD WORKING . . Saw tooth setter power driven for hand and band saws

Source: FOLEY MFG. CO.
3298-302 Fifth St., N. E., Minneapolis 18, Minn.



Alternate teeth on a hand saw or a band-saw blade are set simultaneously by power action so a saw is completely set in one passage through this new Power Setter. The machine is adjusted for tooth pitch between 4 and 16 per in., for blade thickness and for tooth depth. The saw blade is then started between upper and lower anvils and the motor circuit is closed. From there on a pawl feeds the blade forward between strokes of spring-powered hammers acting from above and below the work.

Drive is by a 1/30-hp. 110-volt 60-cycle ac. motor of ball-bearing design. Main bearings in the machine are sealed ball design. Hammers, anvils and cam followers are made of hardened steel with ground finish and are replaceable. Ollite bronze gibs, guiding the hammer slide, are replaceable and adjustable for wear. The machine weighs about 54 pounds. It lists at about $140.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 4867 if you write the maker

FOR YOUR STAINLESS STEEL FASTENERS... IT'S ALLMETAL for quality and delivery

ALLMETAL, Specialists in Stainless, Produce Stainless Products Exclusively

ALLMETAL
the leading source for Stainless Screws, Nuts, Bolts, Washers, Pins, Rivets. Made right, Priced right. "AN" and Standard Types carried in stock. Phillips Recessed Head Screws and Specials available too.

WRITE FOR CATALOG K

MANUFACTURERS SINCE 1929
STAINLESS STEEL FASTENERS
ALLMETAL SCREW PRODUCTS COMPANY, INC.
33 GREENE STREET NEW YORK 13, N. Y.

BREVITY—Identify by IEN - 4868 if you write the maker

FASTER ... MORE EFFECTIVE FIRE CONTROL

WITH THE ANSUL Stream Pattern

PATENT PENDING

plus

BETTER HEAT-SHIELD PROTECTION only Advertise the Nozzle! . . .

. . . because the *nozzle* on your ANSUL Dry Chemical Fire Extinguisher is *water-tight* . . . it *won't* become inoperative due to corrosion or caking of dry chemical within the working parts . . . the most inexperienced man in your plant *can use the ANSUL extinguisher effectively* . . . *and only Ansul has a nozzle* to meet all of these requirements!

If your hazards require special long range straight stream nozzles, you can get Ansul Extinguishers equipped with these nozzles at no extra cost. With Ansul Dry Chemical Fire Extinguishing Equipment you have not only the best fire protection but also a choice of models and designs to meet your requirements.

EXCLUSIVE FEATURES: Water-tight construction • Provides a modified cone-shaped stream pattern without hole in the center of the stream • Each nozzle gas pressure tested after assembly • Special spring loaded packing to insure lasting water-tightness. • Designed for use by inexperienced operators. • Low velocity, more effective stream of dry chemical.

Send for File No. 648. You will receive our catalog, a Periodic Inspection Record Chart, "Fundamentals of Fire Extinguishment" and information about Ansul Dry Chemical Piped Systems for automatic protection.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A. CANADA AND OTHER COUNTRIES

BREVITY—Identify by IEN - 4869 if you write the maker

New! timely technical data on non-hardening STRAIGHT-CHROMIUM STAINLESS TUBING for pressure and mechanical uses

SEND FOR BULLETIN TDC-140

THE BABCOCK & WILCOX TUBE CO.

B&W STAINLESS TUBES

General Offices: Beaver Falls, Pa.
Plants: Beaver Falls, Pa., and Alliance, O.

BREVITY—Identify by IEN - 4870 if you write the maker

YOU SAVE STEEL MANHOURS MONEY

BY USING PLATECOIL FOR TANK HEATING AND COOLING

YOU SAVE CRITICAL STEEL because "Platecoils" require less than ½ the steel used in pipe coils of the same surface area. A 22" x 119" Platecoil weighs 95 lbs. against 239 lbs. for an equivalent 2" pipe coil. 144 lbs. steel saved. YOU SAVE CRITICAL MANHOURS because "Platecoils" are easily installed, cleaned or replaced in minutes . . . No down-time . . . No tank dumping. Many manhours saved.
YOU SAVE MONEY because "Platecoils" cost up to 50% less in initial cost and require less maintenance. Investigate "Platecoils" today.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL
HOLD-HOLD MFG. CO
LANSING 4, MICHIGAN

BREVITY—Identify by IEN - 4871 if you write the maker

SAVE TIME 4 WAYS WITH

HEINRICH
HANDNIB

Ask your Dealer for a demonstration.

USE THIS HANDYMAN OF THE SHOP FOR:
☐ OUTSIDE NIBBLING ☐ SHEARING
☐ INSIDE NIBBLING ☐ ROD CUTTING

● It's easy to cut irregular shapes with a Heinrich No. 4 Handnib. Double crank construction does the trick . . . enables tool makers to speed up cutting of templates and trial blanks. It's rugged . . . takes 3/16" flat stock with ease . . . round stock to 3/8". May be clamped in a vise or mounted on a bench. A request brings folder with full details.

NATIONAL MACHINE TOOL CO.
DEPT. 171-E RACINE, WISCONSIN

BREVITY—Identify by IEN - 4872 if you write the maker

TO: Purchasing Dept.
FROM: Production Dept.

Bill,
When you place orders with toolmakers, please insist on V-R Carbides.
Performance counts and V-R has it.
Fred

CEMENTED CARBIDES • TANTUNG CAST ALLOYS
Over 21 Years
V-R
WAUKEGAN, ILLINOIS U.S.A.
VASCOLOY-RAMET CORPORATION

VASCOLOY-RAMET CORPORATION
WAUKEGAN, ILLINOIS

BREVITY—Identify by IEN - 4873 if you write the maker

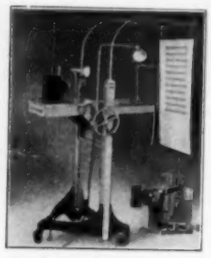
SAWING
FILING

GROB
BROTHERS
GRAFTON WISCONSIN

BREVITY—Identify by IEN - 4874 if you write the maker

PHOTOGRAPHING . . Camera assembly takes employee identification pictures

Source: GRAFLEX INC.
199 Clarissa Ave., Rochester 8, N. Y.



Camera, lights, numbering device and adjustable background are assembled on a caster-mounted stand in this new identification equipment. As many as 400 identification pictures can be exposed per hour on 35-mm. film. The negatives can be printed by contact on photographic pass cards. They can be made into prints for use in tamper-proof badges and for personnel records. They also can be enlarged.

A wheel movement adjusts the background and the camera to correct height when the subject steps into position. A push-pull lever makes the exposure, advances the film and rewinds the shutter for the next picture. Lighting is provided by lamps assmbled on the stand. No operating skill is required.

The background is a suspended curtain, plain on one side and scaled in inches between 4 ft. and 6½ ft. on the other side so the height of the subject can be included in the picture or omitted. Payroll and other index numbers are provided at the bottom of each photograph by seven dials assembled in the base carrying the camera and adjustable at the front. Card clip just above the dials will hold signs with the company name, the worker's department and other desired data. The film is available in 50 and 100-ft. rolls.

In addition to making identification photographs, the equipment can be used to copy correspondence, drawings and other records as well as to photograph small three-dimensional objects. The design represents recent improvement over the unit previously described IEN-6971-40.

BREVITY—Identify by IEN - 4875 if you write the maker

LIGHTING . . Reflector lamps for use in dust filled atmospheres

Source: GENERAL ELECTRIC CO.
1 Nela Park, Cleveland 12, Ohio

Ratings are 500 and 750 watts for two new reflector-type incandescent lamps assembled on mogul-screw bases for operation with the base up or within 25 deg. of that position in high-bay installations. The lamps are suited particularly for plant departments where the atmosphere is filled with dust as in foundries and welding shops. Type R-52 is the designation.

A special contour distributes the light downward. A cut-off provides reasonably comfortable brightness down to 35 deg. below horizontal. The lamps measure 6½ in. across the face by 11¾ in. in length. Illumination is essentially even when the spacing between units is not greater in distance than the mounting height. Downward candle power, within an 80-deg. cone, averages 4,000 for the 500-watt lamp and 6,000 for the 750-watt unit. List prices are $4 and $4.25.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4876 if you write the maker

CHIKSAN
HIGH TEMPERATURE
(Chevron Packing)
BALL-BEARING
SWIVEL JOINTS

Widely used for handling acids and other highly corrosive liquids and gases under pressures to 700 psi. and temperatures to 500° F. Eight different styles in sizes from ⅜" to 4". Easy 360° turning on stainless steel balls in flame-hardened races.

There is a CHIKSAN Swivel Joint for every need

CHIKSAN
CHIKSAN COMPANY
AND SUBSIDIARY COMPANIES
Chicago 3, Ill. BREA, CALIFORNIA Newark 2, N. J.
WELL EQUIPMENT MFG. CORP. HOUSTON 1, TEXAS
CHIKSAN EXPORT CO. BREA, CALIFORNIA NEWARK 2, N. J.

BALL-BEARING SWIVEL JOINTS FOR ALL PURPOSES

BREVITY—Identify by IEN - 4877 if you write the maker

For the Answer to Your Insulation Problem
LOOK THROUGH *This* LINE

Can't guarantee that the Varflex Line will solve every insulation problem. But . . . Many's the problem—large, small, unusual—that Varflex Electrical Sleeving or Tubing has solved. The Varflex range of application is vast—chances are you'll find the solution to your Electrical insulating problem somewhere in the Varflex Line.

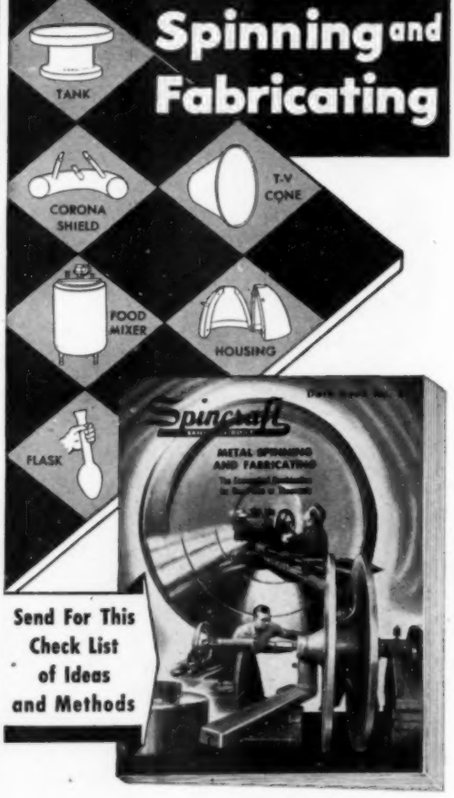
Varglas Silicone retains properties at 500° F or – 85° F. **Varglas Tubing Impregnated with General Electric Permafil,** tough, flexible, heat-resistant. **Varglas Sleeving and Tubing,** numerous types and grades. **Varglas Non-Fray Sleeving,** for temperatures up to 1200° F. **Varflo Tubing and Sleeving,** made of Fiberglas, priced like cotton. **Varflex Cotton Tubing and Sleeving** where Fiberglas is not required. **Syntholvar Extruded Plastic Tubing,** made from vinyl polymers.

Free—For free folder of our complete line, just drop us a card today.

VARFLEX
CORPORATION
306 N. Jay St.
Rome, N. Y.

BREVITY—Identify by IEN - 4878 if you write the maker

Move costs the right way with Spincraft
SKILL WILL DO IT
Spinning and Fabricating



Send For This Check List of Ideas and Methods

There's nothing static about Spincraft spinning and fabricating. It gives you a most flexible approach to design and production — whether quantities are large or small. Best of all, Spincraft methods eliminate high tooling costs; gain weeks of time; save many, many dollars.

The scope of these abilities and facilities in all metals is highlighted in a new reference book that points the way to far greater economy in the production of many parts or products. Here is a source of practical how-to-do-it ideas plus solid engineering facts that is yours for the asking. Send for your copy of the Spincraft data book, now.

Spincraft Inc.
SKILL WILL DO IT
4153 W. STATE ST., MILWAUKEE 8, WIS.
Heretofore known as Milwaukee Metal Spinning Co.

BREVITY—Identify by IEN - 4880 If you write the maker

ANOTHER BANCROFT-HICKEY ORIGINAL . . . recently created for a leading producer of industrial bearings, may be your answer too — if your production is crippled by wheels that won't hold their form.

This superior wheel of organic bond is engineered for long service — yet breaks away before excessive glazing or loading. It *holds* its form, thus minimizing the redressing that inflates diamond costs and robs operator efficiency.

Whatever your grinding operation, use the wheel correct in grade and grain for the job. Use a Bancroft-Hickey original and get performance as individual as a thumb-print.

BANCROFT-Hickey
MANUFACTURING COMPANY
BRISTOL, PA.

BREVITY—Identify by IEN - 4881 If you write the maker

Toptlight Tape

SURE, QUICK
COLOR CODING
NUMBERING
LABELING

FOR WIRES
HOOK-UPS
TUBING
PARTS

NO GLUE, WATER, PEELING

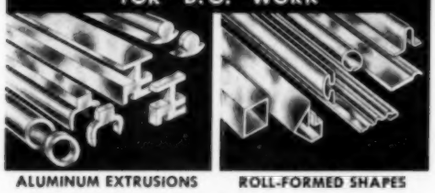
Sticks instantly to any clean dry surface. Easy to use — Saves time.

AND10375 STANDARDS, NEMA AND ASA STANDARD A-13. OR YOUR OWN CODE. USE FOR WARNING AND INSTRUCTION LABELS.

TOPFLIGHT TAPE CO.
YORK, PENNSYLVANIA — U. S. A.
PRINTED PRESSURE-SENSITIVE
Write For Free Literature

BREVITY—Identify by IEN - 4882 If you write the maker

PROMPT DELIVERY!
FOR "D. O." WORK



ALUMINUM EXTRUSIONS — ROLL-FORMED SHAPES

Let Werner light metal shapes help you meet "D.O." deadlines.

You can get prompt delivery of "custom" shapes in extruded aluminum, as well as roll-formed aluminum, stainless steel, brass, zinc and copper. Shapes are manufactured to close tolerances, to your exact specifications. Quality is assured by Werner's extensive manufacturing and engineering experience, plus full production facilities, including tool-and-die-making equipment.

For an estimate, send drawing and specifications, plus data on quantity, finish, length, etc. Werner can perform the following secondary operations — bending, drilling, punching, cutting, counter sinking and welding. Finishes—as extruded, polished or anodized.

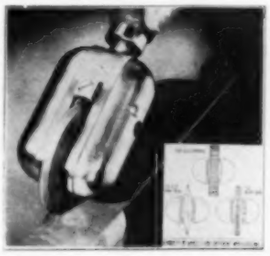
FREE bulletins describing manufacturing facilities and telling when to choose extruded or rolled shapes. Write:

R. D. WERNER CO., Inc.
295 FIFTH AVE., N. Y. 16, N. Y. • PHONE MU 6-2595
MANUFACTURERS OF ALUMINUM EXTRUSIONS AND ROLL-FORMED SHAPES

BREVITY—Identify by IEN - 4883 If you write the maker

SEALING . . Electric tool for seams in thermoplastic sheet

Source: SEALINE MFG. CO.
168-72 N. Peoria St., Chicago 7, Ill.



Sealine-50 is a new wheel-equipped electrically-heated hand tool to close containers made of thermoplastic materials and also to join seams in sheets of the plastic. The wheel is mounted to roll freely over the work. It measures 2½ in. in diameter and is interchangeable in various types for given work. The tool weighs about 1 lb. and connects to 110-volt ac. or dc. power.

A special fluid is carried in a reservoir and is fed by a wick to prevent the wheel from sticking to the work and rupturing the sheet as the sealing operation proceeds. A few drops will last several days, depending on the rate at which the tool is used. Heat can be adjusted between 200 and 450 deg. F. List price is about $19. Fluid lists at $1.50 per bottle.

BREVITY—Identify by IEN - 4884 If you write the maker

CLEANING . . Acid phosphate powder prepares metal surfaces for painting

Source: E. F. HOUGHTON & CO.
301-5 W. Lehigh Ave., Philadelphia 33, Pa.

Needs no special tank equipment

Houghto-Clean 313-A is a new acid-phosphate material supplied in the form of white powder for solution in water and use in a tank or a power washing machine. The solution removes oil compounds, rust preventives, perspiration marks, soldering residues, and then deposits a smooth dry phosphate coating on the metal. This coating is an excellent base for subsequent finishing materials such as paint, lacquer, japan. It protects against corrosion in the interval between cleaning and finishing operations. The operation can be performed with the solution at 160 to 200 deg. F.

BREVITY—Identify by IEN - 4885 If you write the maker

GRINDING . . Abrasive wheels with pressed-in precision bushings

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.

New design in the company's line of straight grinding wheels, in sizes from 5 to 8 in., includes a patented precision bushing that is pressed into the wheel center in place of the previous poured-lead bushings. The company is prepared to supply straight wheels with the new design at present. It expects to add other shapes and sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

BREVITY—Identify by IEN - 4886 If you write the maker

Special TYPES ARE STANDARD at Fairbanks

HAND TRUCKS of special design required for many industries are run-of-the-mill stock items in the Fairbanks catalog. There's a type for every need . . . of sturdy design, high grade materials . . . and built to last. Here are some typical examples. If you don't see what YOU need — ask for it.

THE Fairbanks COMPANY
General Offices: 393 LAFAYETTE STREET, NEW YORK 3, N. Y.
Branches: New York 3, Boston 10, Pittsburgh 22, Rome, Ga.

VALVES • DARTS & PIC UNIONS • TRUCKS • CASTERS

BREVITY—Identify by IEN - 4887 If you write the maker

Cost Problem Solved
with
FULLERGRIPT BRUSH

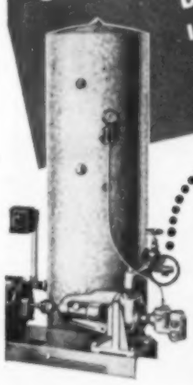
To solve the problem of "the fibers flying out of the brushes", one leather manufacturer asked Fullergript engineers to design and build a new plate washing brush. The Fullergript method of construction solved the problem of "fibers flying out", and the greater density of Fuller gript enhanced the thoroughness of the brushing and increased brush life. This brush has since been widely adopted by tanneries.

Whatever you make, if you have a power-brush operation Fullergript offers advantages worth investigating. Simply write to . . .

FULLERGRIPT The FULLER BRUSH CO.
INDUSTRIAL DIV., 3583 MAIN STREET • HARTFORD 2, CONN.

BREVITY—Identify by IEN - 4888 If you write the maker

CASH-ACME *Valves*
DEMANDED BY INDUSTRY EVERY-WHERE



Type HR Relief Valve

water pump manufacturer specifies CASH-ACME

This leading manufacturer of pumps insists on a relief valve that will last the life of the equipment.

Performance tests proved CASH-ACME to be the best choice. Precision-built of quality materials by craftsmen with over a quarter century of experience, CASH-ACME Automatic Valves are used by more and more industries everywhere. Dependable, consistent performance year after year, without failure, cuts replacement cost to a minimum. Find out how CASH-ACME can help with the successful operation of your products. Write today.

CASH ACME SILENT SENTINEL *Automatic Valves*

A. W. CASH VALVE MANUFACTURING CORP.
6412 E. Wabash Avenue
Decatur, Illinois

BREVITY—Identify by IEN - 4889 If you write the maker

29 HYSTER TRACTOR TOOLS

Any one of them makes your "CATERPILLAR" Diesel Tractor do double duty

WINCHES. Towing, Utility, Worm Drive, HySpeed. A complete line for "Caterpillar" Diesel Tractors.

HYSTAWAY. All the features of a conventional ½ yard excavator plus tractor power, maneuverability. . . . Shovel, backhoe, dragline, clamshell, crane.

Mounted on either a new or an old "Caterpillar" Diesel Tractor, a Hyster tractor tool gives a greater range of uses, increases profit possibilities.

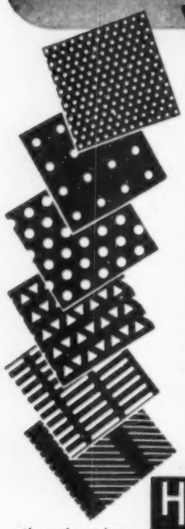
The current line of 29 Hyster Tractor Tools includes the Hystaway; the Grid Roller; and a complete line of winches, yarders, donkeys, cranes, logging arches and sulkies.

Your "Caterpillar" dealer sells and services Hyster tractor equipment. See him for data or write for catalogs.

HYSTER® COMPANY
2916 N.E. Clackamas . . . Portland 8, Oregon
1616 North Adams Street . . . Peoria 7, Illinois

BREVITY—Identify by IEN - 4890 if you write the maker

H & K PERFORATED MATERIALS offer you . . .



AVAILABILITY
H & K is prepared to perforate metal, plastic, fabrikoids, masonite, plywood and many other materials available in sheet, plate or coil form—in thicknesses from tissue thin to 1" steel.

PATTERNS
A wide selection of patterns are available in standard round, square, slot, oblong, triangular holes and also special holes such as indented, lipped, burred, tapered, stabbed, etc.

ACCURACY
Hole sizes can be held to a tolerance of ± .0005" when required. Holes are accurate and uniform in size, shape and spacing.

OPEN AREA
Various spacings and arrangements of our perforations provide wide range from which to select a required percentage of open area.

SURFACE
Smooth and easy to clean.

Send us your specifications for recommendations without obligation.

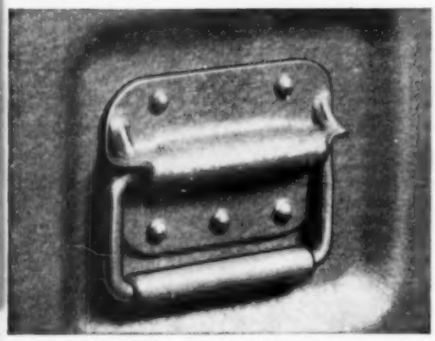
The Harrington & King Perforating Co.

If you do not have H & K Catalog #62 —write for it!

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, N. Y.

BREVITY—Identify by IEN - 4891 if you write the maker

We've Built a Better Handle



FOR MANUFACTURERS OF PORTABLE EQUIPMENT, CARRYING CASES, PARTS BOXES, Etc.!

- ✓ non-rattling
- ✓ rugged construction
- ✓ rust-proof
- ✓ meets Air Force and other Government specifications

Here is the handle you have been looking for—one that is ideally suited for anything that must be lifted by a side carrying handle. Because we could not buy anywhere a satisfactory handle for the thousands of cases manufactured by Bendix and needing such an item, Bendix-Friez engineers developed this handle to meet Air Force and other government specifications for many kinds of special equipment. The unique, rugged design of this handle, with its "snap-back" feature, is such that neither shock nor vibration will cause it to rattle. Built of aluminum and stainless steel, it can be riveted or welded to the side surfaces of any kind of container or depressed in the sides. Available in large or small lots, orders filled promptly. Write for prices.

Bendix-Friez

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation
1328 Taylor Avenue
Baltimore 4, Maryland

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N.Y.

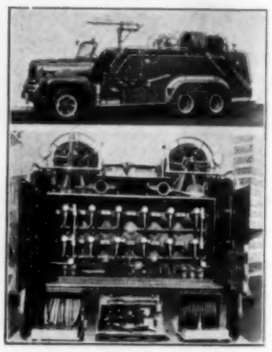
Please send me one sample Bendix-Friez Handle for my inspection. I will return it if not interested.

Name _____
Company _____
Position _____
Street _____ City _____ State _____

BREVITY—Identify by IEN - 4893 if you write the maker

EXTINGUISHING . . Crash truck for fighting any type of fire

Source: WALTER KIDDE & CO.
673-77 Main St., Belleville 9, N. J.



Fire Destroyer designates new automotive crash truck capable of travel speed to 50 mph. to reach and fight any type of fire. It will deliver water, foam, fog and carbon dioxide. It can dispense 2 ton of the combined extinguishing agents per minute. Overall dimensions are 25½ by 8 by 10½ feet. Weight is about 30,000 pounds.

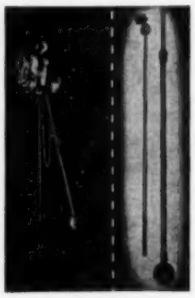
Equipment includes a tank carrying 1,000 gal. of water, twelve 100-lb. cylinders for carbon dioxide which are relayed in two banks of six each, and a large foam tank. A turret nozzle swings through 360 deg. to deliver water, foam or fog. It can throw a stream of water 150 feet. Four 150-ft. hoses are mounted on reels on the upper deck, two for foam or water and two for carbon dioxide. A pump, driven by power take-off, rates 500 gpm. It operates in connection with a transfer valve for series or parallel operation to provide two ranges of pressure and volume. A water connection permits drawing from an independent source as well as from the tank.

Auxiliary equipment can be specified to include a 1,500-watt portable emergency generator to operate two 500-watt search and floodlights, a 20-ft. extension and a 12-ft. hook ladder, a 150-ft. ½-in. carbon-dioxide-booster hose reel, a 100-ft. ¾-in. water-booster hose reel, two pipe poles, hand axes, crowbar and assorted nozzles and applicators.

BREVITY—Identify by IEN - 4894 if you write the maker

CONTROL . . Push-pull rod replaces pull cords on electric hoist

Source: HORTON BRISTOL MFG. CO.
22 Foley St., Bristol, Conn.



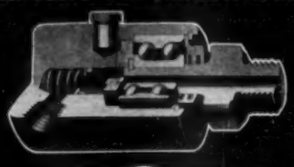
Rigid control has been developed to replace the pull cord for "up" and "down" movements on most designs of electric hoists so one of the operator's hands will be free. The new control attaches direct or by an adapter bar the company can supply to the "down" side of the switch lever on the hoist housing. The operator pulls for downward movement and pushes to raise and lower. Length can be adjusted for various heights above the floor.

Instructions are supplied for installation in the field. List price is $5. This product is the same as the one previously advertised IEN-478-51.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

BREVITY—Identify by IEN - 4895 if you write the maker

FAWICK ROTORSEAL PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX CO., INC.
9919 CLINTON ROAD • CLEVELAND 11, OHIO

For complete information on a FAWICK ROTORSEAL to suit your specific application, write to the Home Office, Cleveland, Ohio.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES

BREVITY—Identify by IEN - 4896 if you write the maker

HERE IT IS! the new B&S duplex REWINDER

OUTSTANDING FEATURES:
- Simplicity of design
- Variable-speed Drive
- High speed (up to 1500 ft. p.m.)
- Compact—saves space
- Vibrationless
- Hydraulically driven differential Rewind Shafts
- Air-Operated Slitters for strips as narrow as ⅛ inch
- Accurate pressure control between Drum and Rewind Shafts
- All hydraulic and air Piping enclosed in Frame
- All Controls easily accessible
- Ease of operation and maintenance
- Efficient and economical

For further details write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N. Y.

BAGLEY & SEWALL
WATERTOWN, NEW YORK
designers and builders of QUALITY MACHINERY SINCE 1853
500 FIFTH AVE., NEW YORK 18, N. Y.

BREVITY—Identify by IEN - 4897 if you write the maker

MODERN PROBLEMS get modern answers with DUREZ

NO MACHINING NO GLUING NO "FINISHING" on complicated 12-pound pieces

Many a production step is by-passed when such components as this 12-lb. TV receiver cabinet come from the mold virtually ready for the assembly line. All holes, lugs, and bosses are formed in the mold. No machining or gluing is necessary, and no finishing other than flash removal. The high dielectric strength of the Durez phenolic plastic safeguards visual and aural performance of the set.

SMALL DETAILS ARE BIG FIELD for design betterment

Restyling of minor components with the right Durez phenolic can go a long way in making things easier to sell, easier to use, less expensive to produce. In this case, single pieces of molded general-purpose Durez replaced 3-piece corn-popper leg units. Assembly of 3 legs used to require 19 operations, is now done in 6. The Durez legs have a neater appearance, and are easier to keep clean. Because they stay "cool", they make the popper safer and easier to pick up during and after use.

TO FACILITATE PRODUCT PLANNING, Durez has developed more than 300 molding compounds, each of which adapts the versatile properties of phenolics to a different set of requirements. Our field technicians can help you and your molder to use these plastics most advantageously. To keep abreast of new uses of the phenolics, write on your office letterhead for our monthly "Plastics News." Durez Plastics & Chemicals, Inc., 1705 Walck Rd., N. Tonawanda, N. Y.

DUREZ *Phenolic Plastics that fit the job*

PHENOLIC RESINS — MOLDING COMPOUNDS — INDUSTRIAL RESINS — PROTECTIVE COATING RESINS

BREVITY—Identify by IEN - 4899 If you write the maker

See for yourself how you can SAVE TIME and MONEY with CORBIN Self-Tightening HOSE CLAMPS

If hose connections are vital to your product or process, you can save time and money with Corbin Hose Clamps! They are *installed in seconds to hold tightly for years!* Simply squeeze the ends of the clamp with pliers, slip the clamp over the connection, release your grip — and *instantly* you have a uniform, lasting seal!

SAMPLES AND SPECIFICATIONS

Write today for detailed specifications and for samples of Corbin Self-Tightening Hose Clamps in the sizes that fit your needs. See for yourself how efficiently these low-cost, time-saving clamps meet every hose connection need! There is no obligation, of course. Write to:

Corbin Hose Clamps fit hoses in sizes from ⅜" O.D. through 2⅝" O.D. They are made of heat-treated steel, treated to protect against rust and corrosion. They are used for rubber, fabric and plastic hose — to convey air, gases or liquids.

CORBIN HOSE CLAMP DIVISION
THE AMERICAN HARDWARE CORPORATION
New Britain, Connecticut

BREVITY—Identify by IEN - 4900 If you write the maker

Phillips INDUSTRIAL TRAILERS

✓ FOR HAULING ALL KINDS OF INDUSTRIAL PRODUCTS—MATERIALS
✓ MADE IN SIZES AND CAPACITIES TO MEET YOUR NEED
✓ FEATURE TIMKEN BEARINGS PNEUMATIC OR SOLID TIRES ALL STEEL WELDED CONSTRUCTION

MODEL TF-50
2½ Ton Capacity

MODEL TD-400
20 Ton Capacity

Write today for complete data!

Phillips Industrial Trailers simplify hauling of heavy loads in and around industrial plants . . . with substantial savings in time, effort, and money. Ruggedly built to withstand long, hard usage, these trailers are available in 2½, 5, 10, 15 and 20 ton capacities. Easily maneuverable—they can be used singly or in tandem, for every industrial hauling requirement.

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

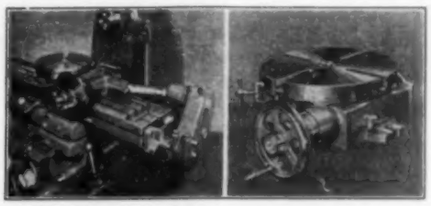
MATERIALS HANDLING EQUIPMENT

2300 JANE STREET • PITTSBURGH 3, PA.

BREVITY—Identify by IEN - 4902 If you write the maker

MILLING . . Circular table for manual or power drive and index

Source: CINCINNATI MILLING & GRINDING MACHINES
Marburg & Kline Sts., Cincinnati 9, Ohio



New 12-in. table has been added to the company's previously developed 16, 20 and 24-in. assemblies for application on its milling machines. The new unit is built for manual and power feed by a worm and wheel having 80 to 1 ratio. Degrees are graduated on the table circumference. The hand-wheel dial is graduated in minutes.

A drive shaft beneath the table, parallel to the feed screw, is geared to the right-hand end of the milling-machine table for power operation. A reverse clutch permits the table to be driven clockwise, counter-clockwise or disengaged for manual rotary adjustment. Both manual and power-driven designs can be equipped with an auxiliary index attachment which takes the same index plate as the company's dividing head.

BREVITY—Identify by IEN - 4903 If you write the maker

CRANE . . Engine driven assembly, hydraulic transmission for control

Source: ORTON CRANE & SHOVEL CO.
606-10 S. Dearborn St., Chicago 5, Ill.

For light or heavy loads

The company announces availability of its line of cranes with the General Motors Dynaflow hydraulic drive between the engine and the load. The drive cushions shock, promotes smooth operation, permits lifting or lowering a load in precise movement, provides the exact torque required for each movement. The company supplies the equipment to order.

BREVITY—Identify by IEN - 4904 If you write the maker

WELDING . . Plastic cover plate protects helmet glass from spattering

Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntingdon St., Philadelphia 32, Pa.

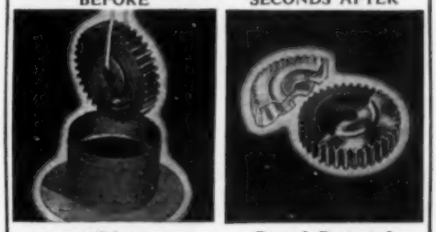
GS No. 125 is a new plastic cover plate measuring 2 by 4¼ in. for application in arc-welding helmets and hand shields to protect the filter glass against spatter. The plastic is resistant to discoloring. Spatter will not adhere to it. Optical qualities are excellent. List price is 35 cents each in lots of 1 to 99 or 25 cents each in lots of 500 or more. Typical application is shown.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 4905 If you write the maker

HOT MELT PLASTIC COATINGS for GEARS • TOOLS • PRECISION PARTS

BEFORE SECONDS AFTER



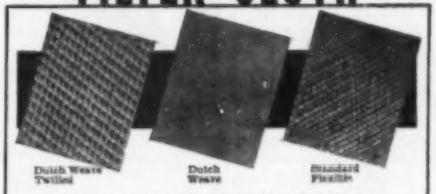
Dip Coated • Protected

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
470 Frelinghuysen Avenue, Newark 5, N. J.

BREVITY—Identify by IEN - 4906 If you write the maker

FILTER CLOTH



There's a Roebling Metallic Filter Cloth for your exact requirements

NO MATTER WHAT your filtering problems, you'll get maximum efficiency and top service economy with the *right* Roebling Metallic Filter Cloth. Roebling makes Filter Cloth from an exceptionally wide range of metals and alloys...in every practical weave and mesh. Those pictured above have the strength required for higher pressures or vacuum. They're smooth-woven and easy to clean; readily adaptable for nearly any type of filter.

Send for full information about Roebling Metallic Filter Cloth. And let us discuss you particular problems and furnish samples.

WOVEN WIRE FABRICS DIVISION
John A. Roebling's Sons Company, Roebling, New Jersey

ROEBLING

BREVITY—Identify by IEN - 4907 If you write the maker

does your plant wear

dark glasses?

it does if its windows are painted or of colored glass!

Have you ever tried wearing dark glasses all day long? When the sun shines bright you can see, but when it's cloudy you're half blind. When the windows of your plant have colored or translucent glass, it's just like wearing dark glasses. For the proper light all the time, use clear glass in the windows, with light controlled by Ra-Tox wood splint Ventilating Shades. Shades are raised and lowered easily for any daylight condition . . . provide draftless ventilation, are low in cost and easy to maintain. WRITE FOR Bulletin S-308. Ask for free by mail estimate card.

for the BEST in light use clear glass plus
RA-TOX WOOD SPLINT VENTILATING SHADES
Supplied in wide color range and in any required size.

THE HOUGH SHADE CORPORATION
Industrial Division
1033 JACKSON STREET • JANESVILLE, WISCONSIN

BREVITY—Identify by IEN - 4908 If you write the maker

CHECK THESE ADVANTAGES In Using Phillips Recessed Head Screws
- Rapid Driving
- Snug Assemblies
- Excellent Bearing—Better Holding
- Attractive Appearance
- No Marring or Work Spoilage from Driver Slipping

Pheoll Phillips Recessed Head Screws and Bolts Speed Power and Hand Driving

● Material reduction in driving time is effected with Phillips Recessed Head Screws. There is no lost time in driving the screw straight into the work or centering the driver in the head recess. In the Phillips Recess, fully engineered mechanical principles are so correctly applied that each angle, plane and dimension contributes fully to driving efficiency.

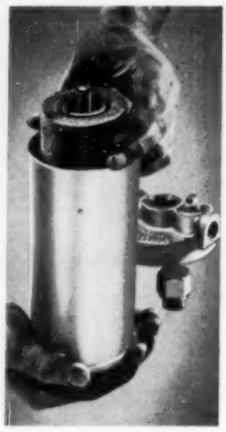
Major reasons why you should use Phillips Recessed Head Screws and Bolts...they are easier to drive...safer to use...no driver slippage...no marring of work...final product appearance is improved.

OTHER EFFICIENT ASSEMBLY-LINE PHEOLL PRODUCTS
Square Head Set Screws • Headless Set Screws • Socket Cap and Set Screws • Thumb Screws • Stove, Chair and Ladder Rods • Continuous Threaded Rods • Rolled Threaded Wire and Studs • Special Rivets and Pins • Brass Washers.

Pheoll MANUFACTURING COMPANY • 5700 Roosevelt Road Chicago 50, Illinois
SCREWS • BOLTS • NUTS Industrial Fasteners and Molding Devices

BREVITY—Identify by IEN - 4909 if you write the maker

THIS SHOULD HAPPEN ONLY HALF AS OFTEN!



Eliminate half the cartridge replacements—select Cuno MICRO-KLEAN micronic filters.

Exclusive "graded density in depth" doubles dirt capacity, prevents clogging. Exclusive resinous impregnation and polymerization prevent shrinking, swelling, channeling.

When replacement *is* required—it's *quick* and *clean*. Housing easily disassembled.

Guaranteed densities: 10, 25, 50 microns. Capacities: from a few to over 800 gpm. Handles wide range of fluids, flow rates, viscosities.

Write for Bulletin MK-035. Cuno Engineering Corporation, 697 South Vine Street, Meriden, Connecticut.

CUNO
Fluid Conditioning
Removes More Sizes of Solids from More Types of Fluids

BREVITY—Identify by IEN - 4910 if you write the maker

FREE SANITARY SURVEY!

Let your Dolge Service Man make a complete sanitary survey of your premises with a view to helping achieve more effective, efficient, economical maintenance.

Send for Booklet No. 12

Dependable DOLGE
WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 4911 if you write the maker

A Better Drill For Hardened Steel

Long carbide end keeps cutting heat away from braze.

Write for Catalog Supplement No. 4

QUALITY CARBIDE TOOLS

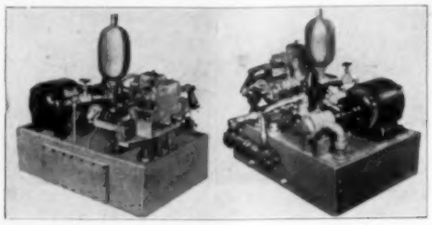
Super TOOL COMPANY

21650 Hoover Rd., Detroit 13 • 5210 San Fernando Rd., Glendale 2

BREVITY—Identify by IEN - 4912 if you write the maker

WELDING . . Hydraulic power unit to operate and time a flash welder

Source: KINGSLEY A. DOUTT
18463-67 Schaefer Highway, Detroit 35, Mich.



Hydra-Flash trade names a new motor-driven hydraulic power unit for application on a new or old flash-welding machine with transformer capacity that does not exceed 500 kva. or with an upset cylinder area not greater than 76 square inches. The unit and its associated controls regulate the flashing cycle, the flashing curve or platen acceleration, the upset travel, the weld-power interruption, the holding time on the work clamp after completion of the weld and the platen-holding time after the clamp releases. Application relieves the operator of duties other than to place and remove work.

Three major elements make up a complete installation. These are the hydraulic assembly which mounts at the end of the welding machine, the electrical control panel that can be placed on the machine or an adjacent wall and the adjustable-stroke hydraulic power cylinder. This cylinder is designed to permit stroke adjustment without changing the amount of upset. With it is a limit switch that is positioned to control the upset travel and is the only switch required for operation of a standard flash welding machine.

Bulletin, 6 pages, "Hydra-Flash Control for Flash Welders", presents assembly drawings and detail description of the equipment and its operation.

BREVITY—Identify by IEN - 4913 if you write the maker

SHEARING . . Portable hydraulic tool for mild steel bar stock to 1 1/16 in.

Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.

Motor-driven pump supplies hydraulic pressure for the operation of this new Model 20-E hydraulic shear. The new assembly supplements the foot-operated equipment previously described IEN-7839-50. The power unit includes a 2-hp. electric motor or a comparable gasoline engine as specified. The shear itself weighs 38 lb., opens to 3½ in., rates mild-steel bar stock to 1 1/16 in. in diameter or wire rope to 1¼ inches. The connecting hose lines are 25 ft. in length. Control centers at a hand valve at the shear. Release of this valve results in blade retraction. The cutting head moves forward and holds as long as the valve is held down.

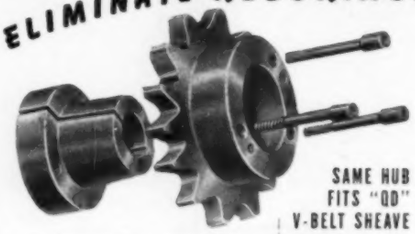
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4914 if you write the maker

FORT WORTH QD Roller Chain SPROCKETS WITH TAPERED SPLIT HUB

PATENT APPLIED FOR

ELIMINATE REBORING!



SAME HUB FITS "QD" V-BELT SHEAVE

Speed changes are simplified and "spare" sprockets can be carried more easily.

If your favorite distributor doesn't stock this new item, tell him about it. He'll reward you with better service.

"OFF THE SHELF" SERVICE AVAILABLE FROM INDUSTRIAL DISTRIBUTORS

Reboring of stock bore sprockets to fit various shafts is eliminated due to the various bores available in the QD hub. Installation and removal from the shaft is made easy by the tapered fit of the hub and sprocket. Hub assembly grips the shaft equivalent to a "press fit."

Catalog explaining additional advantages and construction details will be furnished on request.

OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH STEEL AND MACHINERY CO
3600 McCART, DEPT. 34, FORT WORTH, TEXAS

BREVITY—Identify by IEN - 4915 if you write the maker

SAFETYMIX

EXTRA SHOWER SAFETY ... at no extra cost

PROTECTS AGAINST SUDDEN SCALDS
. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT
. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE
. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE
. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

BREVITY—Identify by IEN - 4916 if you write the maker

*How a Pittsburgh Brush Solved an Oil Pressure Problem**

*** An actual case history from the Allis-Chalmers Pittsburgh Works, manufacturers of Transformer Radiators.**

At Allis-Chalmers, well-known manufacturer of industrial equipment, the problem was to secure a satisfactory oil pressure test on transformer radiators. The key to the problem was to find a brush narrow enough to clean between cooling fins and strong enough to remove slag and spall on welds which could conceal pinholes. Pittsburgh engineers recommended an 8" rotary wire brush. The brush proved more than satisfactory and the problem was solved!

Let Pittsburgh Engineers Solve Your Brush Problems.

Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical and economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. M5, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH
Power Driven BRUSHES
BRUSHES • PAINT • GLASS • CHEMICALS • PLASTICS
PITTSBURGH PLATE GLASS COMPANY

BREVITY—Identify by IEN - 4918 if you write the maker

Now—have a spic and span floor around machines!

Here's a flooring tip for the man who likes his plant to look as neat as his office.

Tuff-Tex* is a unit-laid, plastic-asbestos tile which is *highly resistant to greases and oils.*

It withstands heavy traffic, has high flexural strength, can take floor vibrations. It also resists impact from dropped objects.

Left unwaxed, Tuff-Tex provides safe, non-slip footing.

Quickly installed, easily cleaned, it is proving a "natural" for commercial kitchens, laboratories, service stations and such places as well as for factory areas.

FREE literature shows the wide range of colors. Write THE TILE-TEX DIVISION, The Flintkote Company, 1234 McKinley St., Chicago Heights, Ill.

AND FOR THE OFFICE, USE TILE-TEX*... THE QUALITY ASPHALT TILE

TILE-TEX FLOORING PRODUCTS

*REGISTERED TRADEMARK, THE FLINTKOTE COMPANY

BREVITY—Identify by IEN - 4919 if you write the maker

You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND FLO TRUK

● An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items. The HAULER for cases, crates, tote boxes, etc. The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

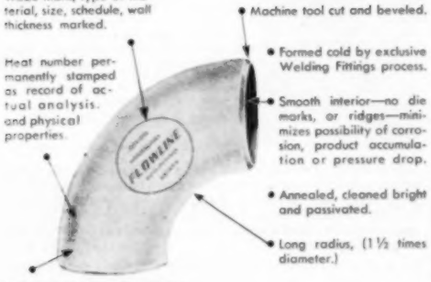
Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 4920 if you write the maker

Smooth Interior Surface Assures FREE FLOW



FLOWLINE stainless welding ells, reducers, tees, stub ends, and caps are available in sizes from ½" through 12". 2846 stock items—see Bulletin S-310.

FLOWLINE STAINLESS WELDING FITTINGS

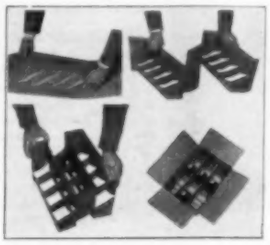
STAINLESS STEEL TYPES 304, 316, 347 • MONEL • INCONEL • NICKEL

WRITE FOR BULLETIN S-310 WELDING FITTINGS CORPORATION, NEW CASTLE, PENNSYLVANIA
World's Largest Manufacturer of Stainless Welding Fittings

BREVITY—Identify by IEN - 4921 if you write the maker

PACKAGING . . Paper carton nesting forms pockets to cushion fragile products

Source: SHELTON MFG. CO.
42-26 Orchard St., Long Island City 1, N. Y.



Shellnest trade names new patented design of corrugated-carton partition assembly. It is made of two pieces of corrugated paper by slitting and forming so they nest together to form orderly cushioning pockets in the carton. The units lie flat until they are to be used to minimize space requirements in storage. They open as shown in the illustration and assemble together in the carton so fragile containers cannot touch each other or the sides of the carton. Sizes are subject to specification.

BREVITY—Identify by IEN - 4922 if you write the maker

RECTIFYING . . Selenium cartridge, output to 8,000 volt and 75 ma. dc.

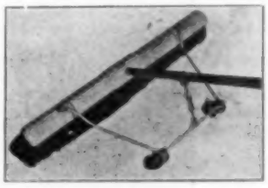
Source: INTERNATIONAL RECTIFIER CORP.
6807-11 S. Victoria Ave., Los Angeles 43, Calif.

Series W-HS is new addition to the company's line of cartridge-type selenium rectifiers in which selenium-cell sizes range from ⅝ to 1 in. in diameter for output-current ratings between 1.5 and 75 ma. The new series is constructed in a 1¼-in. phenolic tube with stud mounting at each end. The circuit is half-wave. Overall length is to 14 in., depending on the dc. output voltage.

BREVITY—Identify by IEN - 4923 if you write the maker

CLEANING . . Brush attachment takes floor brush weight on casters

Source: JEF MFG. CO.
315 W. Monument Bldg., Dayton 2, Ohio



U-shaped frame made of steel rod is equipped with two swivel casters, a turnbuckle and a clamp and two bolts for attachment to a floor brush as shown in the illustration. The casters take the weight from the brush on its return stroke, remove a good deal of the manual effort required for operation of the brush over a plant floor. Floor Brush Chassis is the designation. List price is $5.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4924 if you write the maker

Output of machined parts is speeded up without sacrifice of accuracy with a Super-Spacer. This indexing fixture allows rigid control of the machining operation, yet saves expensive setup time on long or short runs. Send for Bulletin S-101.

HARTFORD *Special* THE HARTFORD SPECIAL MACHINERY CO. HARTFORD 12, CONN.

BREVITY—Identify by IEN - 4925 if you write the maker

WRIGHT Again!

NOW... NEW FRAME "B"

Speedway

● Rugged construction, yet light and portable, the new **Wright Frame "B" Speedway Electric Hoists** are designed for service in practically any location. Ideally balanced for hook suspension. ● Ball and roller bearings, alloy steel gears, swaged cable fittings, heavy duty motor, silver contact controls are some of the features which assure long life and low maintenance cost. Capacities from 250 lbs. to 1000 lbs.

Write for literature.

ACCO York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

WRIGHT HOIST DIVISION
AMERICAN CHAIN & CABLE

In Business for Your Safety

BREVITY—Identify by IEN - 4926 if you write the maker

LOOK! There's always something new in RAPISTAN

Production-boosting **PRESS-VEYOR*** SMALL PARTS CONVEYOR

Better than ever now . . . the cleated belt conveyor that will again be chosen to keep production at top pace during the national emergency. The improved Rapistan Press-Veyor rolls easily from job to job . . . "flows" stampings, forgings, extrusions, from one press to another . . . eliminates stock-handling and damage . . . insures on-time delivery of rush orders. 4', 6' and 8' lengths. Various bed widths. Wide adjustability range. Standard current motors.

Write for prices and free catalog
The RAPIDS-STANDARD CO., Inc.
433 Rapistan Bldg. Grand Rapids, Mich.
Booths 154 and 155
Materials Handling Exposition

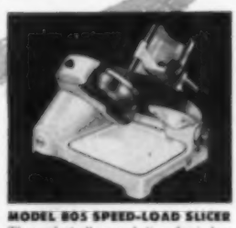
Rapistan MATERIAL *flow* EQUIPMENT

CONVEYORS: Power or Gravity, Portable and Stationary
Also a complete line of CASTERS & HAND TRUCKS

*T.M.

BREVITY—Identify by IEN - 4927 if you write the maker

Cost-Cutter FOR INDUSTRIAL CAFETERIAS



DEPENDABLE. This slicer is precision-built to last. Sharpening stones, that swing clear when not in use, keep blade keen.

SAFE. Operator is protected at all times. Light on switch shows when slicer is running. Adjustment for knife wear keeps it safe.

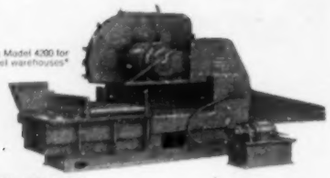
EASY TO CLEAN. Gleaming white finish wipes clean in a jiffy. Guards are removed without tools.

MODEL 805 SPEED-LOAD SLICER
The perfect all-around slicer for industrial cafeterias. You change products fast. Slice vegetables, cheese, boneless hot or cold meats, poultry. Vegetable chute available for fast slicing of potatoes, radishes, etc.

U.S. BERKEL *Write* for Illustrated Literature on Slicers • Choppers • Meat Saws • Tendersteak Machines

U. S. SLICING MACHINE COMPANY, INC.
501 Berkel Building, La Porte, Indiana

BREVITY—Identify by IEN - 4928 if you write the maker



PROOF that you can do it faster with KLING high speed friction saws

What is friction sawing? It is a proven means of using mechanical heat to cut steel. The weakened steel is removed by each succeeding section of the cooled saw blade—with no apparent wear on the blade.

Fastest, all-around cut-off machine in the shop. No set-up changes required to cut any sequence of structural shapes. No distortion. Takes the place of several separate shears or slow speed saws. Cuts alloy steels, too, in record time. Blade life is measured in thousands of cuts.

FREE friction sawing information. *Write today for free booklet on Friction Sawing. Learn how you can profitably apply Friction Sawing in your plant.*

How long would it take you to cut these pieces?		Cut it with a Kling in . . .
24" 100 lb. I Beam		28 seconds
15" 55 lb. Channel		15 seconds
8" x 8" x 34.3 lb. H Beam		10 seconds
100 lb. A.R.A. Rail		9 seconds
6½" x 6½" x 19.8 lb. Tee		5 seconds
8" x 8" x ¾" Angle		11 seconds
3" Square		10 seconds
4" Round		15 seconds
6" O.D. Tube, ¼" Wall		11 seconds

† Approximate Times

*What's your requirement? There's a size to fit your specific needs—large or small.

KLING BROS. ENGINEERING WORKS
1306 N. Kostner Ave., Chicago 51, Ill.

Kling ...an investment in speed!

MANUFACTURERS OF: Combination Shear, Punch & Copers • Double Angle Shears • Rotary Shears • Punches • Plate Bending Rolls

BREVITY—Identify by IEN - 4929 if you write the maker

ROTO FINISH

GIVES YOU 5 OUTSTANDING ADVANTAGES for Deburring, Descaling and Finishing Operations

1. Eliminates tedious hand filing, scraping, polishing, deburring, etc. to save many man hours.
2. Provides absolute uniformity in quantity lots.
3. Maintains exacting tolerances on precision parts where no dimensional change is allowable.
4. Imparts a finish mechanically that was formerly considered possible only by hand methods.
5. Low initial cost — requires minimum maintenance. No exhaust systems required.

Send samples for free demonstration

Roto-Finish COMPANY
associated with The Sturgis Products Co.
3701 MILHAM RD., KALAMAZOO, MICHIGAN
ORIGINATORS OF THE ROTO-FINISH PROCESSES

BREVITY—Identify by IEN - 4930 if you write the maker

Quiet Telephoning

IN A NOISY OFFICE

A thick blanket of acoustic material soaks up noise in this patented Burgess-Manning Acousti-Booth to provide a "zone of quiet." Conversations are clearer . . . private. Modern in appearance. Suitable to any location.

Mail Coupon for Free Booklet

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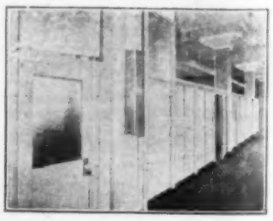
743-A East Park Ave., Libertyville, Ill.
Please send me your booklet describing Burgess-Manning Acousti-Booths.
Name_____
Firm Name_____
Street_____ City_____ State_____

BREVITY—Identify by IEN - 4931 if you write the maker

BUILDING . . Sectional partitions include steel and glass panels, doors

Source: VIRGINIA METAL PRODUCTS CORP. 160 W. Broadway, New York 13, N. Y.



Combination single thickness or packed-steel panel or glass and steel with single and double door openings and doors can be specified in multiples of 21, 36 and 42-in. height increments. Panel widths range from 24 to 108 inches. The panels fit together in a tongue-and-groove assembly side by side for vertical combinations to height of 30 feet.

Two types, B and WB, are made with wide muntin spacing and are equipped with bases. Two additional types, W and BW, omit the bases and are provided with narrow muntin spacings. An independent floating base is removable for lay-in wiring and the wiring can be carried through the posts and chair rail as well as the bases. Covers on both sides of the post are removable to take electric fittings. End fillers are secured to existing walls with steel posts.

Bulletin, 16 pages, "Mobile Walls," presents technical information with typical assemblies, section views and layouts, designs and specifications and data on hardware.

BREVITY—Identify by IEN - 4932 if you write the maker

HEATING . . Petroleum gas torch feeds from refillable gas cylinder

Source: MUTUAL LIQUID GAS EQUIPMENT CO. 3606 W. Imperial Highway, Inglewood, Calif.

Mutual B-91 is a new all-purpose portable torch. It will produce a flame with temperature to 2,300 deg. F. for operations such as brazing, burning, leading, sweating, soldering. Gas feeds from a refillable cylinder for continuous operation to about 4½ hours. Refilled cylinders are sold or rented. Each is a registered unit with fusible plugs, fill and vapor valves and a liquid-level gage.

Available with the torch are accessory units as shown in the illustration. These include an extension hose and valve, various designs of tips and a soldering iron. A feature of the unit is the fact that it provides instant starting without need to pump, prime or preheat or adjustment of the flame to prevent it from blowing out.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Try the hundreds of listings in the index, page 110.

BREVITY—Identify by IEN - 4933 if you write the maker

NO METAL PARTS TOO SMALL TO CLEAN *Perfectly* in the L&R

INDUSTRIAL PRECISION CLEANING MACHINE

For more than a decade industry has cleaned its smallest, most precise metal parts in this machine that employs the famous L&R Centrifugal Cleaning Action. In the Work Basket, measuring 3⅜" deep by 5½" I. D., typical parts, like those shown can be cleaned, rinsed, polished and dried in less than ten minutes—with three sets of parts separated by use of triple nesting baskets shown above. To eliminate a major production headache, order your L&R Industrial Cleaner today, or write for further catalog information.

Price complete____$262.50

L&R Manufacturing Co., • 577 Elm St., Arlington, N. J.
Branch Offices:
55 E. Washington St., Chicago, Ill. • 355 S. Broadway, Los Angeles, Cal.

BREVITY—Identify by IEN - 4934 if you write the maker

BREVITY—Identify by IEN - 4935 if you write the maker

JABSCO SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1 MORE CAPACITY—for its weight, size and price.
2 SELF-PRIMING—starts instantly with high suction lift.
3 ONE MOVING PART—tough, long-lived.
4 GEARLESS—impeller outlasts metal gears.
5 TROUBLE FREE—simple construction.
6 ECONOMICAL—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY
2031 N. Lincoln Street • Burbank, California

BREVITY—Identify by IEN - 4936 if you write the maker

Bulletin 8210

General Purpose Control Valves

★ Full Port Area—Packless
★ For Air, Gas, Water, Brine, Freon, Methyl Chloride, Light Oil and other Liquids and Gases up to 212°F; Pressures up to 400 pounds
★ Several Auxiliary Variations
★ Several Sizes: ⅛ to 2½ inches

Our Bulletin 8210 Solenoid Valves are designed for those shut-off requirements where a simple, rugged, automatic control will serve. They close instantly when current to the coil is cut off. Full line pressure on top of the valve piston aided by a powerful spring assures tight closing. They reopen fully when the coil energy is restored.

Bulletin 8211 Valves are similar except that they have Explosion-Proof Solenoids approved by Underwriters' Inc., Class 1, Group D, Hazardous Location.

ASCO Solenoid VALVES

If you have any automatic control problems that fit into the above class, study fully the merits of Asco Bulletin 8210 and 8211 Solenoid Valves. Write us anyway, regardless of your problems, because we have many other types of solenoid valves.

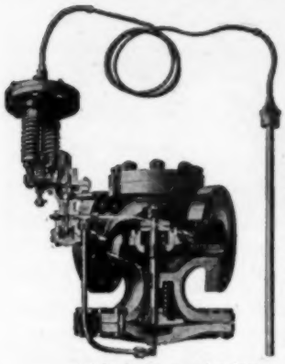
When in need of Electromagnetic Controls, come to us.

Automatic Switch Co.
383 Lakeside Avenue Orange, New Jersey

BREVITY—Identify by IEN - 4937 If you write the maker

LOW COST

Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm—under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today.

SE-106

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

BREVITY—Identify by IEN - 4938 If you write the maker

here's a simple device to locate almost any kind of leak

NEW DPi LEAK DETECTOR
MODEL LD-01

All you do is seal the sensitive element into the system being tested and bring the interior a little below atmospheric pressure. Then you direct a small jet of harmless Freon Gas at suspected spots and watch the meter. It's as simple as that, and sensitivity is high enough even where one-millionth of atmospheric pressure is to be maintained.

It works like this: The sensitive element contains a heated platinum anode and a cold cathode with relatively low voltage between them. The tendency of hot platinum to emit positive ions is enormously stimulated by infinitesimal traces of halogens or their compounds. The circuit to accomplish all this uses only three standard radio tubes and operates from your 115-v a-c lighting circuit.

For full information write *Distillation Products Industries,* Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

DPi

high vacuum research and engineering

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 4940 If you write the maker

HEATING . . Rubber mat, electrically heated for worker comfort

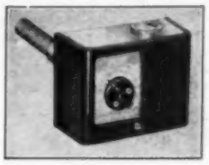
Source: THERMO-MAT CO.
812-16 S. Robertson Blvd., Los Angeles 35, Calif.

Alloy wire capable of controlling current flow, with accompanying limit of maximum temperature, is employed in place of a thermostat in this new design of the company's electrically-heated floor pad. The unit is known as Thermo-Mat and is designed for a worker to stand on. Current consumption is maximum at 200 watt. Overall dimensions are 14 by 22 by 5/32 inch. List price is about $12.

BREVITY—Identify by IEN - 4941 If you write the maker

THERMOSTAT . . Immersion assembly for hot water temperature control

Source: PENN ELECTRIC SWITCH CO.
13th & Monroe Sts., Goshen, Ind.



Series 442 covers a new line of immersion thermostats or controls employing liquid-expansion temperature elements and single-pole, single-throw switches rated at 7½ amp. on 110-volt ac. One assembly in the line opens the circuit on temperature rise and closes it on temperature drop. The second one operates in the opposite direction. A self-compensated power element is not affected by ambient temperature.

BREVITY—Identify by IEN - 4942 If you write the maker

CUTTING . . Abrasive discs for concrete, brick, tile, stone

Source: CARDINAL ENGINEERING CORP.
1001 Diamond St., Philadelphia 22, Pa.

New line of abrasive discs includes a range of types in sizes from 6 to 24 in. for use on specified machines in given types of masonry. The blades vary in hardness for given work and are available for operation wet or dry. Thickness is ⅛ in. with diameters from 6 to 14 in. and ¼ in. in diameters from 6 to 24 inches. Size and shape of the arbor hole can be specified. One type of disc is impregnated with abrasive through its structure. The other carries diamond-impregnated segments on its outer rim to cut hard vitreous materials.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4943 If you write the maker

REDUCE PRODUCTION COSTS—F.O.S. Tape is handy, versatile, inexpensive. Simplifies production in *many* ways . . . Stays put—but can be removed quickly without requiring "cleanup." Let SEAMLESS analysts show you how to save time and money with F.O.S. No obligation! . . . *Write today for samples and prices.*

Finest Quality Since 1877

REG. U.S. PAT. OFF.

INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

BREVITY—Identify by IEN - 4944 If you write the maker

DUAL CROSS and ROTARY FEED
PALMGREN
Rotary, Index, Milling Table

No. 83

Now Only $49.50

Turns Your DRILL PRESS Into A VERTICAL MILLER

Think what this will mean in your shop! Can be used on any Drill Press, Lathe or Milling Machine and provides what is practically a universal milling machine.

Designed for use in all types of metal and woodworking shops. A precision table permitting fine work to close tolerances. It is accurate, speedy, well constructed and attaches quickly in a firm position.

Rotary feed calibrated in degrees; Cross feed in thousandths; Dual Cross Slide with cross feed 2⅛" each side of center or 4½" overall. Has acme thread cross feed screws, adjustable gibs on cross slides. 40 to 1 worm and gear ratio in rotary feed. Equipped with bolt slots and locking screws.

No. 83 Table Dia. 8", T-Slots ½", Base Keyway ⅛", Base Dia. 6¼", Ht. 5", Wt. 37 lbs. Price Only $49.50. Other Types available. No. 82 Dual Cross Feed only $39.75; No. 86 Rotary Feed Only $42.50.

Order Today! If dealer can't supply, write us. Ask for Circular No. 10

CHICAGO TOOL and ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS Since 1918
8406 South Chicago Ave. • Chicago 17, Ill.

BREVITY—Identify by IEN - 4945 If you write the maker

PROBLEM:
How to Prevent Contact Sticking in a Vacuum Tube

GENERAL PLATE:
Provided the Solution with a Composite Metal Combination

A leading manufacturer of radio and industrial tubes and electronic equipment was faced with a problem of finding the right metal for use as a sliding contact in vacuum tubes.

Copper provided a mechanical problem because it tended to gall.

Molybdenum was ideal but was too thick to form and too costly to machine out of solid material.

The problem was presented to General Plate whose engineers quickly found the solution by bonding *two metals into one* . . . a thin layer of molybdenum (.005") to a thicker layer of cupro-nickel (.060").

The result was a General Plate *Composite Material that was easily fabricated, gave the performance of solid molybdenum, reduced costs considerably.*

No matter what your problems, it will pay you to *check with* General Plate. Their vast experience in combining precious to base metals or base to base metals can overcome your problems . . . often reduce costs.

Have You a Composite Metal Problem? General Plate can solve it for you

GENERAL PLATE
Division of Metals & Controls Corporation
31 FOREST STREET, ATTLEBORO, MASS.

BREVITY—Identify by IEN - 4946 If you write the maker

WHITNEY ROLLER CHAIN
Flexible Couplings

FOR YOUR DIRECT POWER DRIVE APPLICATIONS

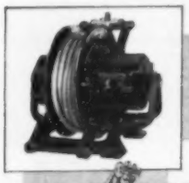
Whitney Roller Chain Flexible Couplings offer the equipment manufacturer and machine user a practical and efficient unit for connecting power equipment to direct drives. All steel construction . . . precision roller chain and hardened cut tooth sprockets provide positive operation . . . assure long life.

Check these Whitney Flexible Coupling features, easily installed, allows for motor end float, disconnects without removing shafts or bearings, allows for slight shaft misalignment.

You can use Whitney Flexible Couplings wherever a positive yet flexible direct drive is required. Write for information.

WHITNEY CHAIN COMPANY
202 Hamilton Street Hartford 2, Connecticut

BREVITY—Identify by IEN - 4947 if you write the maker



POSITIVE POWER SUPPLY For Moving Machinery

CONSTANT DUTY

APPLETON REELITE

For smoother, more economical operation of your moving machines, team them up with Appleton Constant Duty Reelites! These sturdy, precision-built reels automatically take up and pay out conductor cable, preventing breaks, kinks and tangles.

Operating on spring tension, Appleton Constant Duty Reelites hold cable taut, preventing accidents, avoiding delays, speeding work.

Thousands have profited through the use of Appleton Constant Duty Reelites. Why don't you?

Write for Complete Catalog Information or see Sweet's File, Page 2a/Ap

Sold Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1716 Wellington Ave., Chicago 13, Ill.
Branch Offices and Resident Representatives in all Principal Markets

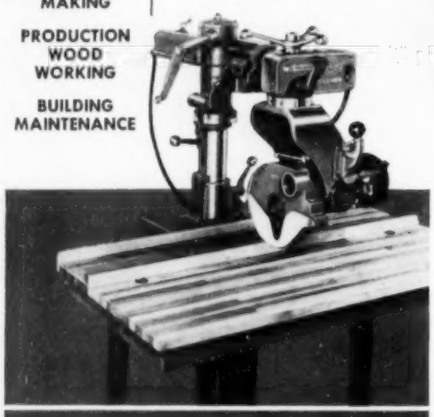
APPLETON
CONDUIT FITTINGS · LIGHTING EQUIPMENT · OUTLET AND SWITCH BOXES
EXPLOSION PROOF FITTINGS · REELITES

BREVITY—Identify by IEN - 4948 if you write the maker

CUTS YOUR COSTS

PACKING and SHIPPING
PATTERN MAKING
PRODUCTION WOOD WORKING
BUILDING MAINTENANCE

on all these operations



WALKER-TURNER "900" RADIAL SAW

13 Power Tools in One!

Big Capacity — 3½" deep cut with 9" blade
Precise Controls — quick, easy on operator
New Type guard — for ripping, gives extra protection
Exclusive direct-geared motor — minimizes power demand
Feather-touch feed — has constant repeat-cut accuracy
Full work-visibility

SOLD ONLY THROUGH AUTHORIZED DEALERS

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

See your distributor or mail coupon for bulletin

DRILL PRESSES • JOINTERS • TABLE SAWS • BAND SAWS • BELT and DISC SURFACERS • JIG SAWS • RADIAL SAWS • LATHES • TILTING ARBOR SAWS

WALKER-TURNER DIVISION
Kearney & Trecker Corp., Dept. IE-5, Plainfield, N. J.
Please send me the new Walker-Turner "900" Radial Saw Bulletin.

Name _____
Address _____
City _____ State _____

BREVITY—Identify by IEN - 4950 if you write the maker

TRUCK . . Power lift fork design, engine drive, has 1 ton load rating

Source: BUDA CO.
15401 S. Commercial St., Harvey, Ill.

Model FB-20 is new design in the company's 1-ton power-lift fork truck, previously described IEN-4568-50. The new unit is available with the 1-ton rating on 15-in. load center in front of the uprights and also at 24 inches. Only difference between the two is assembly weight. Three mast heights measure 65 to 83 in. with the forks in lowered position, five lift heights are between 72 and 120 inches. Truck weight is about 3,500 lb. for the 15-in. load center and about 4,100 lb. for the 24-in. assembly.

Overall length is about 63 in. without the forks. Overall width is 32 inches. The truck is mounted on a 38-in. wheel base with 7 in. of underclearance at the center. It can be operated in 54-in. intersecting aisles with the standard 30-in. length of fork. Speed in both forward and reverse is low at 4½ mph. and high at 7 mph. Construction employs a single gear-shift lever mounted on the steering column and an instrument panel with a complete set of gages in front of the operator. The drive includes a 9¼-in. clutch that can be replaced in about 30 min. without removing the transmission.

BREVITY—Identify by IEN - 4951 if you write the maker

HEATING . . Cabinet type oven for laboratory or production use to 600° F.

Source: MICHIGAN OVEN CO.
4546 Grand River Ave., Detroit 8, Mich.

Motor-driven fan circulates air through this new oven in connection with distribution passages which direct the air upward in the fan outlet to a plenum chamber from where it is moved horizontally through the work space, across the source of heat, and back to the fan inlet. The oven is available for gas or electric heating and is equipped with industrial temperature controls.

Construction includes steel inner and outer shelves with mineral-wool insulation between. The hinged door is gasketed to prevent leakage and is equipped with approved type of safety latch. Oven corners are rounded. The smallest unit having a work space equivalent to an 18-in. cube, measures 3½ by 2 by 4½ ft. overall. The largest assembly with a space equivalent to a 4-ft. cube measures about 7 by 5 by 7 feet. Typical applications include paint and core baking, drying, curing, sterilizing.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4952 if you write the maker

test this three-way

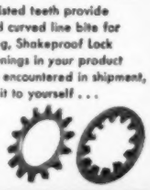
Vibration Protection

FREE sample kit demonstrates locking efficiency of . . .

SHAKEPROOF LOCK WASHERS

Because exclusive tapered-twisted teeth provide spring tension, strut action and curved line bite for holding, bracing and anchoring, Shakeproof Lock Washers will protect the fastenings in your product from the hazards of vibration encountered in shipment, in handling and in use. Prove it to yourself . . .
Write for free test kit today!

Request Kit No. 21 which contains a wide range of types and sizes for your own testing purposes.

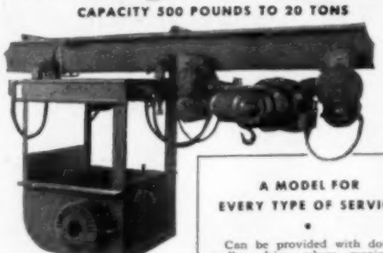


SHAKEPROOF inc.
fastening headquarters
DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois

BREVITY—Identify by IEN - 4953 if you write the maker

For "Long Haul" Economy

CAPACITY 500 POUNDS TO 20 TONS



HOISTING UNIT—
Single or multiple-speed control, with positive load brake. Balanced drive distributes stresses evenly. Oil bath lubrication assures long, trouble-free life. Sealed housing keeps out abrasive dust and moisture. Anti-friction bearings throughout.

Recommended for most economical operation over long runways.

A MODEL FOR EVERY TYPE OF SERVICE

•

Can be provided with double trolley drive where maximum speed is required.

Furnished for cycle operation when specified.

Hoist mounted crosswise to runway for close clearance work if desired.

Operator's cab either open or completely enclosed and weather-proofed.

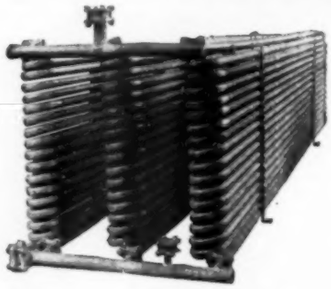
Existing floor-operated hoists easily converted by addition of Trailer Cab in which controllers are mounted.

Write for Bulletin 177—"Aerial Railways of Industry"

Shepard Niles CRANE & HOIST CORPORATION
456 SCHUYLER AVE. • MONTOUR FALLS, N. Y.

BREVITY—Identify by IEN - 4954 if you write the maker

PITTSBURGH a air p pressure t tested COILS



Pipe Coils — Bends — Boiler Tubes

Electrically welded, continuous; Air-Pressure-Tested while submerged in water. Built to your specifications.

— Send for Coil Data Book, and let us quote —

Welded Headers—Welded Ammonia Receivers—Accumulators

Pittsburgh Pipe Coil & Bending Company
461 BRIDGE STREET, ETNA, PITTSBURGH 25, PA.

BREVITY—Identify by IEN - 4955 if you write the maker

Many NAGLE PUMPS BUT ALL ARE FOR ABRASIVE or CORROSIVE MATERIALS

THERE are many types of pumps—numerous pump manufacturers—but WE SPECIALIZE in pumps for abusive applications—pumping slurries, sludges, tailings, acids, hot liquids. The 2" type "SW-OB," frame 95J, pump is typical. Made for a large eastern chemical company to handle sulphuric acid, saturated with chlorine, it has rendered splendid service. The vessel on which the pump is mounted is of Hastalloy. This single stage inverted entrance pump is designed for wet pit submerged operation. Dual radial bearings and balanced shaft eliminate deflection and whip—Nagle Pumps run quietly. Designed throughout for easy dismantling. Threaded and bolted Type "D" 4-vane impeller can't come loose.

Send For Catalog 4906

Nagle Pumps, Inc.
INDUSTRIAL PUMPS FOR ABRASIVE APPLICATION
1241 CENTER AVE., CHICAGO HEIGHTS, ILL.

BREVITY—Identify by IEN - 4956 if you write the maker

Automatic, continuous-flow Flux Recovery System

On submerged arc welding jobs, Invincible Flux Recovery Units save money by: **1** Salvaging *all* unfused flux, **2** Operating far more efficiently than manual methods, **3** Reducing welding rejects by removing all fine dust (flux flour).

Write for FREE FOLDER on FLUX RECOVERY SYSTEMS

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

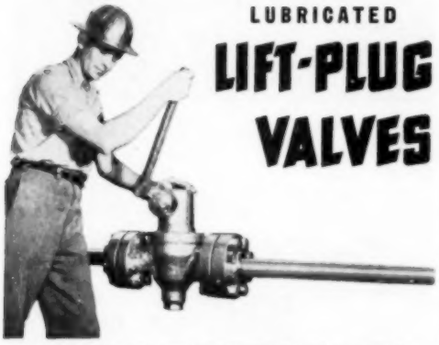
BREVITY—Identify by IEN - 4957 if you write the maker

Eliminate

VALVE LUBRICATION EXPENSE AND BOTHER

Cameron

NON-LUBRICATED LIFT-PLUG VALVES

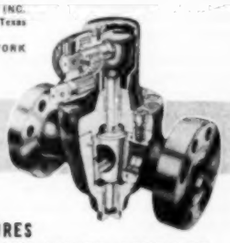


Body distortion will cause most conventional valves to leak because the sealing surfaces tend to separate under the action of pressure forces and line strains. To bridge this separation of sealing surfaces, a viscous lubricant is usually injected into the valve, resulting in high material and labor costs in order to maintain proper functioning.

The Cameron "Lift-Plug" Valve functions properly and seals without lubrication of the sealing surfaces due to the novel design which incorporates a separate seat and which is not attached to the body. Obviously, body distortions cannot affect the sealing efficiency because they cannot be transmitted to the seat. As a matter of fact, line pressure acts on the seat itself to improve the sealing contact between the seat and plug.

Completely descriptive literature and dimensional data will gladly be sent upon request.

CAMERON IRON WORKS, INC.
P. O. Box 1212 - Houston, Texas
EXPORT:
74 TRINITY PLACE, NEW YORK



THE BEST FEATURES OF PLUG AND GATE VALVES COMBINED WITH NEW CAMERON INNOVATIONS

NON-LUBRICATED — no grease of any kind required to effect a seal; prevents contamination of line products; and reduces chance for human error and need for maintenance. PRESSURE SEALING — when plug is seated, line pressure automatically forces seat into tighter engagement with plug — body distortions do not affect the seal. UNIQUE LIFT-PLUG ACTUATOR — a novel mechanical design which lifts, turns and reseats plug in continuous turn of a lever. RENEWABLE SEAT AND PLUG — easily replaced; permits any desired trim for specific services. REPAIRS ON THE JOB — can be completely overhauled without removal from line; no special tools or skill required. EASY OPERATION — requires less operating effort than other valve designs. FORGED STEEL — all parts, including body for most sizes, are press or drop forged from specification materials.

BREVITY—Identify by IEN - 4959 if you write the maker

MARKING . . Adhesive labels for accident prevention application

Source: W. H. BRADY CO.
14-18 E. Spring St., Chippewa Falls 9, Wis.

Cotton cloth with self-adhesive backing forms the base for a new line of Quik-Label safety signs. Each is coated with silicone to protect it from dirt, grime, moisture, weather in order to permit application indoors or outside. Each sign is mounted on a dispenser card from which it can be removed to apply on a given surface without moistening. The complete line contains a selection of some 500 different signs and markers available from stock. The signs meet requirements of the ASA. Standard Z35.1-1941.

BREVITY—Identify by IEN - 4960 if you write the maker

CLEANING . . Floor mop truck mounts two buckets and wringer

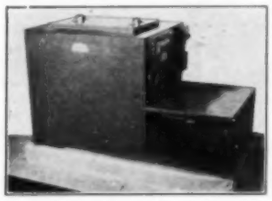
Source: FINNELL SYSTEMS INC.
2602 East St., Elkhart, Ind.

Mop Truck No. 4B is a new assembly of caster-equipped unit to take two 5-gal. buckets and a hand-operated wringer as shown in the illustration. The wringer rollers are made of metal and are adjustable for pressure. The wringer stands 27 in. above the floor. A mop can be stored on the truck.

BREVITY—Identify by IEN - 4961 if you write the maker

REFRIGERATING . . Sub-zero machine to shrink, stabilize, test and store

Source: ALPHA ELECTRIC REFRIGERATION CO.
1113-17 E. Seven Mile Road, Detroit 3, Mich.



Work space in this new sub-zero equipment measures 16 by 24 in. in width and length. It is 18 in. in depth under the insulated cover. The equipment is available to hold minimum temperature at minus 60 deg. F. in one model and minus 150 deg. F. in another. The compressor is driven by a ¾-hp. motor for one machine. Two of the refrigerating units are used on the other. Overall dimensions are 62 by 30 by 32 in. and 74 by 36 by 38 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 30

BREVITY—Identify by IEN - 4962 if you write the maker

NP PRE-ENGINEERED *Pneumatic* **DOOR OPERATORS**

NATIONAL PNEUMATIC CO., INC.
Boston • Graybar Bldg., New York • Chicago

BREVITY—Identify by IEN - 4963 if you write the maker

SAVE MANPOWER - BY USING AUTOMATIC CIRCUIT CONTROL

EFFICIENT USE OF MANPOWER is more important today than ever before. Utilize this valuable manpower to the fullest by doing away with unnecessary *manual operation*—where automatic time control can do the job.

GENERAL ELECTRIC time switches furnish automatic time control for almost any job—process timing, pump and blower control, oven or conveyer control, plant lighting, floodlighting.

YOU'LL SAVE TIME and avoid the trouble of switching equipment on and off manually . . . you'll save in power costs that mount up when power is left on overtime.

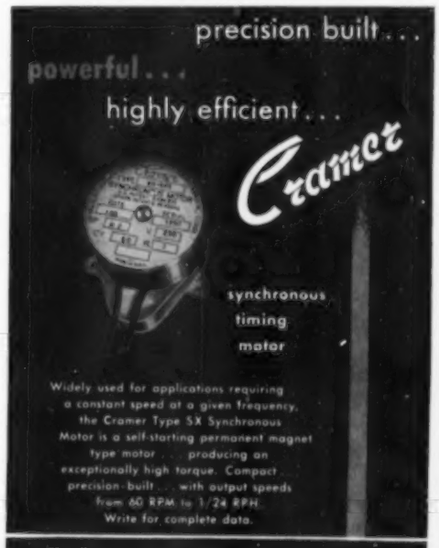
General Electric offers you a complete line of time switches designed to fit *your* timing needs. See your G-E representative for more information. General Electric, Schenectady 5, N.Y.

T-47 TIME SWITCH: inexpensive, efficient control; for one ON-OFF operation in 24 hrs.

T-27 TIME SWITCH: handles almost any timing problem; rugged, versatile, convenient.

GENERAL ELECTRIC

BREVITY—Identify by IEN - 4964 if you write the maker



THE R. W. CRAMER CO., INC.
BOX 16, CENTERBROOK, CONN.
INTERVAL TIMERS • RESET TIMERS • CYCLE TIMERS • PULSE TIMERS
TIME DELAY RELAY • RUNNING TIME METERS • PERCENTAGE TIMERS

BREVITY—Identify by IEN - 4965 if you write the maker

This Is The Difference Between Close-Coupled Pumps

THIS EXCLUSIVE FRAME DESIGN combines maximum space for packing maintenance with exceptional rigidity in a way that no pump assembled to a standard motor can do. Solid cast-iron with no joints from motor end housing to pump casing assures permanent alignment.

Keeps Your Costs Down, Too

Motor and pump are designed for each other and made in the same plant. You have one responsible source for both . . . one guarantee of satisfaction. Every Allis-Chalmers pump representative is a competent application engineer who will help you select exactly the right pump for your needs. And 94 A-C Certified Service Shops provide nation-wide factory approved service.

Talk over your pump selection problems with your Allis-Chalmers Authorized Dealer or Sales Office or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletins 52B6059 and 52B6140. A-3325

Electrifugal is an Allis-Chalmers trademark.

ALLIS-CHALMERS

BREVITY—Identify by IEN - 4966 if you write the maker

for dependable performance from freezing to brazing

Whether it's sub-zero food processing or high-temperature copper brazing—or in numerous in-between applications—Wissco Metal Processing Belts carry the product safely, dependably, more efficiently.

Write for illustrated catalog MS-600 describing the adaptability and cost-cutting advantages of Wissco Belts—with or without chain edge—in the processing of foodstuffs, metals, glass, ceramics, veneers, textiles, rubber and numerous other products.

WISSCO METAL PROCESSING BELTS CF&I

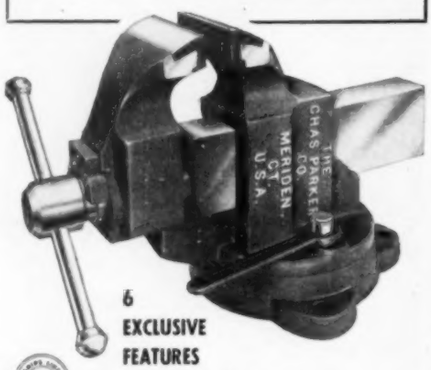
A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Office and Plant—56 Sterling Street, Clinton, Massachusetts
Executive Office—500 Fifth Avenue, New York 18, New York
Sales Offices—Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • New York • Philadelphia
Pacific Coast—The California Wire Cloth Corporation, Oakland 6, California

BREVITY—Identify by IEN - 4967 if you write the maker

PARKER VISES

Complete Line Including

HINGED PIPE VISES • WOODWORKERS' VISES



6 EXCLUSIVE FEATURES

Write for catalog
Sold 100% through distributors

THE CHARLES PARKER CO.
MERIDEN CONNECTICUT

BREVITY—Identify by IEN - 4968 if you write the maker

When looking for a fitting, you can save both time and money by checking the Laughlin Data Book first. Many fittings you've had made up as "specials" you'll probably find as Laughlin standard items.

FREE! This valuable catalog gives you information on wire rope and chain fittings plus helpful tables and other data. It's yours for the asking.

LAUGHLIN
THE MOST COMPLETE LINE OF DROP FORGED WIRE ROPE AND CHAIN FITTINGS

MAIL THIS TODAY . . . no cost or obligation

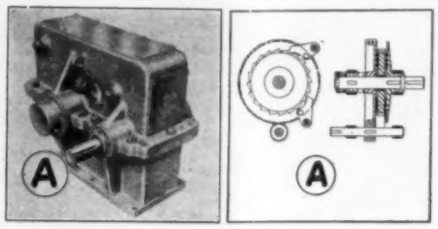
THE THOMAS LAUGHLIN CO.
15 Fore St., Portland 6, Maine

Please send Catalog-Data Book #150 to:
Name ..... Position .....
Company .....
Street .....
City ..... Zone ... State .....

BREVITY—Identify by IEN - 4969 if you write the maker

DRIVE . . Mechanical load brake controls lowering on a crane or hoist

Source: DOWNS CRANE & HOIST CO.
538-42 W. Vernon Ave., Los Angeles 54, Calif.



Safe speed is held in lowering movement of a crane or hoist and a load is prevented from moving downward at all unless the hoist motor is rotating following application of this new combination of mechanical load brake and geared hoist-drive assembly. The brake is a Weston type in which a ratchet wheel, faced on both sides with friction discs, rides free on the output or load shaft between two discs, both of which slide axially on the output shaft.

One of the discs also serves as the driving gear and operates in connection with a helix on the shaft so the ratchet wheel is clamped securely between the disc faces when a load is imposed in downward rotation without starting the motor that connects to the input shaft. The ratchet wheel is prevented from rotating in downward direction by two pawls. These pawls ride free when a load is being lifted so the braking action is not operative upward.

Five sizes in the line rate 600 to 5,000 in. lb. of torque. Overall length in line with the drive shaft is 21¼ to 32½ inches. Greatest dimension at right angles to the shaft is 21⅛ to 37 inches and overall height is 16⅞ to 28⅝ inches. The shafts are fitted with standard oil seals and are mounted in bronze bushings with oil pockets and grooves for flood lubrication. Standard gear reduction is 5 to 1.

BREVITY—Identify by IEN - 4970 if you write the maker

LIGHTING . . Portable searchlight employs sealed beam reflector lamp

Source: UNITY MFG. CO.
2907-11 Indiana Ave., Chicago 16, Ill.

Lamp filament and reflector in this new portable searchlight are hermetically sealed in glass. The sealed element is assembled in the front of a metal housing equipped with a molded plastic handle, adjustable mounting stand and switch. Standard unit connects to a 110-volt power source by means of the extension cord and plug. The sealed-beam lamp and the rubber-phenolic impact-resisting molding compound, used to make the handle, are supplied by General Electric Company. Rating is 100,000 candle power. List price, about $13.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4971 if you write the maker

BREVITY—Identify by IEN - 4972 if you write the maker

Everybody SHOULD get into the act..

For top efficiency in fastener selection

TOP MANAGEMENT, DESIGNER, ENGINEER, PRODUCTION MAN and PURCHASING AGENT, should *all* get into the act when it comes to fastener selection. It is *everybody's business* to help shave production costs.

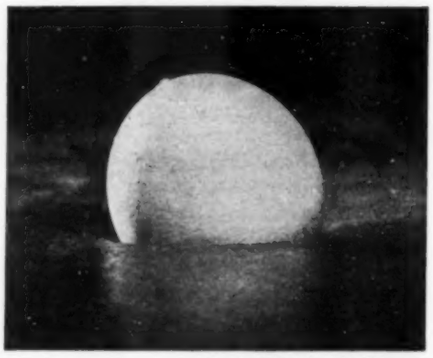
It is important to know what type of fasteners are available, their tensile strengths, metal characteristics and their ability to stand up under power drive torque on the production line.

Yes, fastener selection should be everybody's business—from the "top brass" down. Remember, it always pays to pay attention to fasteners!

The home of "quality controlled" fasteners — Lamson & Sessions

The LAMSON & SESSIONS Co. . General Offices: 1314 West 65th Street • Cleveland 2, Ohio
Plants at Cleveland and Kent, Ohio • Birmingham • Chicago

BREVITY—Identify by IEN - 4973 if you write the maker



Unretouched photograph taken at the moment of impact by micro-flash process.

Eggs bounce off "SHOCK-ABSORBING" RUBATEX without breaking!

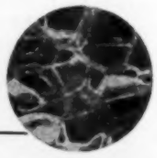
Dropped from a height of more than one hundred feet and traveling at over sixty miles an hour, this egg bounced off a three-inch-thick RUBATEX closed cellular rubber pad without breaking.

The ability of RUBATEX to literally smother impact is due to a dense structure of tiny balloon-like chambers, each retaining inert nitrogen under pressure. Each chamber is completely sealed from the others by a wall of live rubber, forming an amazingly resilient cushion which rapidly dissipates the hardest blows.

If you have a gasketing, sealing, shock-absorbing, or vibration damping application—or perhaps a critical packing problem—you will find RUBATEX possesses characteristics ideal for your purpose. RUBATEX cannot absorb moisture. It has high insulating value—is resistant to oxidation and is rot and vermin proof. It has good compressive strength—is resilient, light in weight, and buoyant.

For further information, write for Catalog RBS-12-49, Great American Industries, Inc., RUBATEX DIVISION, BEDFORD, VIRGINIA.

Photo-micrograph of RUBATEX closed cellular rubber shows the tiny, individually sealed balloon-like chambers which retain inert nitrogen under pressure.



RUBATEX® CLOSED CELL RUBBER
For Gasketing • Cushioning • Shock Absorbing • Vibration Damping

▼ BREVITY—Identify by IEN - 4975 If you write the maker ▼

It's an idea that pays off handsomely—to contact Aetna for specialized anti-frictioneering help.

Aetna engineers will gladly work with your organization in confidence—in the unbiased selection of standard bearings or in the design of special bearings or precision parts for unusual applications. Facilities for sizes up to 38" O.D.—for microscopy, physical testing and metallurgical laboratory services. Write today!

AETNA BALL AND ROLLER BEARING COMPANY
4600 SCHUBERT AVENUE • CHICAGO 39, ILLINOIS

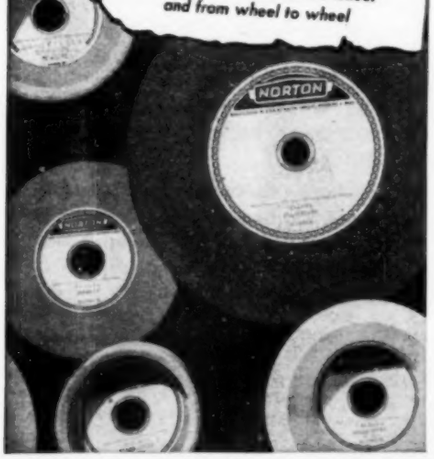
Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

▼ BREVITY—Identify by IEN - 4976 If you write the maker ▼

TOOLROOM GRINDING QUALITY GOES UP *when you specify:*

NORTON *NEW-PROCESS* GRINDING WHEELS

Truly uniform within each wheel and from wheel to wheel



YOUR NORTON DISTRIBUTOR NOW HAS THEM in sizes and shapes up to 12" diameter for any toolroom grinding job. **ASK FOR THEM.**

INSIST ON ALL 3

1. CLOSER TOLERANCES from unique inherent balance that lasts for the life of each Norton *New-Process* Wheel. Less vibration eliminates chatter marks.

2. UNIFORM GRINDING ACTION from the more uniform structure and more even wear of these precision-made wheels *plus* the assurance that all identically marked wheels will perform identically.

3. LESS TOOL SPOILAGE from the fast, cool-cutting action of Norton Alundum* abrasives which allow heavier cuts in expensive high-speed steels without drawing the temper.

WRITE FOR DETAILS concerning types and sizes of Norton *New-Process* grinding wheels for toolroom operations. NORTON COMPANY, WORCESTER 6, MASS. Warehouses in 5 cities. Distributors in all principal cities.

*Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

NORTON ABRASIVES
Making better products to make other products better

▼ BREVITY—Identify by IEN - 4978 If you write the maker ▼

PROTECTING . . Plastic face shield with visors for specific types of hazards

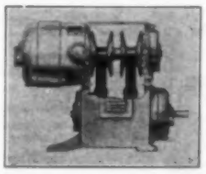
Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Two types of visor and three types of head gear can be assembled interchangeably with the plastic facepiece in the company's new line of Bulletin CN-4 face shields. Chempruf trade-names one visor to guard the face, eyes and neck against chemical splash. Chipruf, the other visor design, protects against light flying particles as in sanding, light grinding, wood working, metal pouring, glass manufacture. The head gear is available with a full spark guard, a semi-spark guard or without any.

▼ BREVITY—Identify by IEN - 4979 If you write the maker ▼

DRIVE . . Variable speed unit assembles motor and double V-belt

Source: U. S. ELECTRICAL MOTORS INC.
202 E. Slauson Ave., Los Angeles 54, Calif.

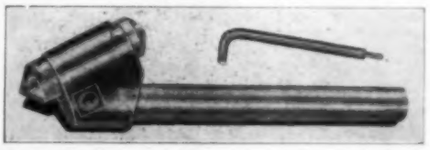


New assembly of motor and pair of V-belts has been added to the company's line of Varidrive variable-speed drives, particularly for heavy-duty service in ratings to 50 hp. The motor drives the input side of two variable-pitch sheaves in an assembly employing a spring-equipped mechanism to maintain correct pressure between the sheaves and the belt. Pitch is adjusted to obtain a desired speed by turning a control dial on the side of the housing.

▼ BREVITY—Identify by IEN - 4980 If you write the maker ▼

GRINDING . . Wheel dresser mounts diamond in index head on shank

Source: ANTON SMIT & CO.
333 W. 52nd St., Room 1108, New York 19, N. Y.



Index-A-Point designates a new assembly of shank and index head mounting a diamond. The head is positioned at an angle with the axis of the shank for any angle of approach of an existing tool post or dressing fixture. The head provides means to set the diamond in succeeding positions on seven divisions around a complete circle. The index movement can be locked after it has been set.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 4981 If you write the maker ▼

TAC does what no other tool can do!

AT LAST! AN OPEN-END RATCHET WRENCH — the world's first true *universal* wrench. A patented design for connections on tubing, rods, piping, conduit, studs, etc. Sixty-four socket sizes from ⅜" to 4". Smallest effective ratcheting arc yet — 5° to 7½°. TAC will also do every job any ordinary ratchet wrench will do: one TAC set replaces literally dozens of single-purpose hand tools.

makers of advanced tools for industry

TAC

TAC is the registered trademark of

TUBING APPLIANCE CO.
7112 South Victoria • 10321 Anza Ave. • Los Angeles, Calif.

▼ BREVITY—Identify by IEN - 4982 If you write the maker ▼

AIR EXPRESS

***with* SPENCER VACUUM**

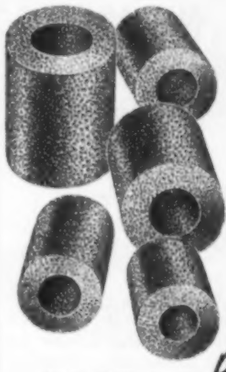
Industry has taken to the air to speed production. It's the air of powerful vacuum—Spencer Vacuum which is being used daily for more than 100 startling applications for conveying, recovery, waste disposal, automatic dust-free production and sanitation, particularly in the food, chemical and metal industries.

It is moving mountains of rice from freight cars, hot fly ash from pits and sand from the bowels of ships.

Spencer Vacuum is also speeding bench work, reducing dust conditions and cleaning the finished products. In food it's sanitation, vermin control and conveying. Ask for Bulletin No. 144.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
439-E

▼ BREVITY—Identify by IEN - 4983 If you write the maker ▼



CHICAGO Internal Grinding WHEELS

Rapid Delivery

MANUFACTURED TO ORDER

Chicago Internal Grinding Wheels produce better finishes with longer wheel life and cutting action. They're your best buy—"tailor made" to your specifications and speedily delivered.

Advanced production methods assure you perfectly balanced Internal Wheels to meet rigid finishing requirements. Faster delivery . . . with overnight service for special jobs.

WRITE TODAY for full details on all Chicago Wheel products . . . and *free* sample Chicago Internal Grinding Wheel.

CHICAGO WHEEL & MFG. CO.
Dept. N, 1101 West Monroe St.
Chicago 7, Illinois

▼ BREVITY—Identify by IEN - 4984 If you write the maker ▼

***PRINTWEIGH* STOPS LOSSES!**

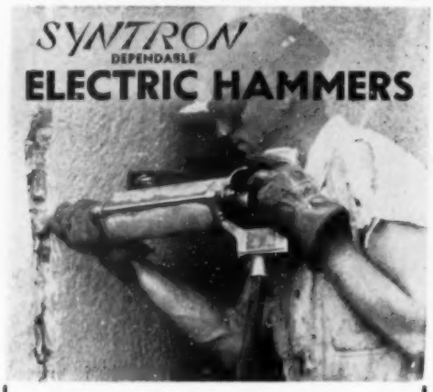
ELIMINATES HUMAN ERRORS IN READING REMEMBERING AND RECORDING WEIGHTS

PRINTWEIGH SCALES give you *accurate printed records* of each weighing operation . . . positive assurance that your weight facts are right *every* time! Prints big, clear figures . . . on thick tickets . . . on large or small sheets . . . on strips . . . with extra copies. Saves time, stops losses for receiving, shipping, stock rooms, batching and many other weighing operations. Write for bulletin 2021. Toledo Scale Company, Toledo 12, Ohio.

TOLEDO
HEADQUARTERS FOR SCALES

BREVITY—Identify by IEN - 4985 if you write the maker

SYNTRON DEPENDABLE ELECTRIC HAMMERS



Bring Production Speed to those Maintenance and Installation jobs that require

DRILLING • CUTTING • CHIPPING in Concrete and Masonry

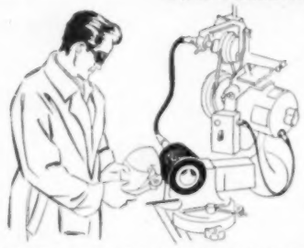
3600 powerful blows per minute make short work of such jobs — save time and money — reduce fatigue.

Write for illustrated folder.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 4986 if you write the maker

NEW, IMPROVED NU-MATIC



THE WHEEL WITH THE PNEUMATIC DRUM

With this Nu-Matic wheel the abrasive belt rides on a cushion of air contained in a rubber drum. Different pressures in the drum and different grits provide varied surface finishes. Deflate, and belts can be changed easily and quickly for grinding, sanding or polishing. Cut your labor, production and inventory costs with Nu-Matic grinding units. Adapters for ⅛"-11 or ½"-13 power equipment. (Specify size.)

Adaptable to bench, portable or flexible shaft power.

NU-MATIC GRINDERS, INC., 10304 W. McNICHOLS RD.
Detroit 21, Michigan UNiversity 3-2573

BREVITY—Identify by IEN - 4987 if you write the maker

No More Frozen or Galled STUDS (even at 1800 F.!) Try this Amazing Money Saver..

FREE Test Sample of the NEW FEL-PRO C-5 "HI-TEMP" THREAD COMPOUND

Eliminates Pitting of Stainless and Alloy Steels at all Temperatures!

CUT costly stud breakage, heater dismantling time, pitting of metal surfaces!

We'd like to send you a free sample of the new Fel-Pro C-5 "Hi-Temp" Thread Compound to try on your toughest thread compound problems, including alloy and stainless steels. Then you can see the amazing, money-saving results being obtained by the nation's largest refineries, utilities and process industries. Fel-Pro's exclusive Colloidal-Copper formula keeps metal parts separated, regardless of temperatures. Its neutral action solves the alloy and stainless steel pitting problems. One utility company reports that heater dismantling time has been cut from two days to four hours, by the use of Fel-Pro C-5 "Hi-Temp". Why not see what "Hi-Temp" can do for you . . . get your free sample and complete data sheet—*write today!*

FELT PRODUCTS MFG. CO.
1222 Carroll Ave., Chicago 7, Illinois

BREVITY—Identify by IEN - 4988 if you write the maker

FEEDING . . Motor driven hopper particularly for small headed pieces

Source: FEEDALL MACHINE & ENGINEERING CO.
29-31 Elm St., Willoughby, Ohio

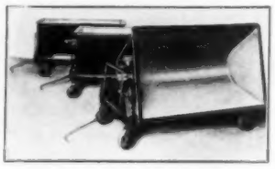
Model 300 is a new feeder assembly particularly for small headed parts such as rivets, screws, contact points in shank diameters to $\frac{3}{8}$ inch. The unit shown in the illustration is tooled for a silver contact point with a shank measuring $\frac{1}{16}$ in., a $\frac{5}{32}$-in. head and $\frac{1}{8}$-in. overall length. Overall dimensions are about 7½ in. in bowl diameter by 13 in. in height. The feeder is fabricated steel with a cast aluminum bowl or hopper.

A selector ring carries milled slots on its rear surface to permit work pieces to enter in only one position. It is driven by the motor. Parts picked up by the selector ring are retained in it until they are in place over a chute where they discharge in a uniform feed line to the point for application.

BREVITY—Identify by IEN - 4989 if you write the maker

TRUCK . . Four-wheel dump unit holds 1 cu. yd., roll-dumps to side

Source: KLAAS MACHINE & MFG. CO.
4322 E. 49th St., Cleveland 25, Ohio

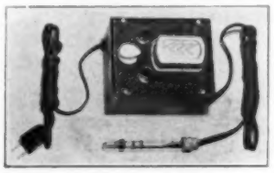


Dry materials in process, parts and bulk materials, waste matter can be handled by this new side-dump truck. The body rocks to dump and is self-righting in design. Overall truck dimensions are about 72 by 36 by 140 inches.

BREVITY—Identify by IEN - 4990 if you write the maker

SIGNALING . . Electric alarm signals on reaching preset temperature

Source: PHILADELPHIA SCIENTIFIC GLASS CO.
51 Industrial Ave., Abington, Pa.



Freez-O-Alarm is a new temperature-actuated signal unit which closes an electric circuit to a red signal lamp after opening the circuit to a green signal. It also actuates a buzzer when temperature reaches a preset point between minus 30 and plus 700 deg. F. The unit plugs into a 110-volt ac. power source which should be separate from that supplying power to the equipment being protected. List price is $14.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 4991 if you write the maker

Clow for CAST IRON PIPE EXPANSION OR REPLACEMENT IN PLANTS . . . NEW BUILDINGS

Leading engineering firms specify Clow "IPS"* Cast Iron Pipe for downspouts, waste and vent lines because of its corrosion-proof qualities.

"IPS" Pipe permits speedy installation with minimum disruption of work. It can be cut and threaded with ordinary tools of the piping trade.

Either plain or threaded ends: 18 foot lengths, sizes 3, 4, 5, 6, 8 and 10 inches . . . *Or* with integral calking hub, other end plain: 18 foot lengths, sizes 4, 6 and 8 inches.

*"IPS" means Iron Pipe Size, having the same outside diameter as steel or G. W. I. pipe.

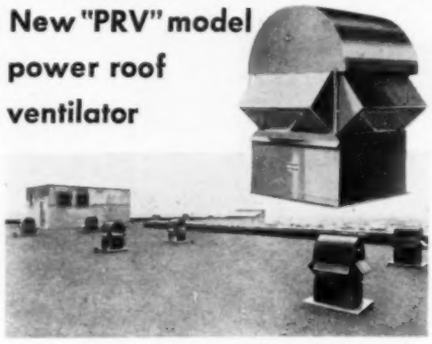
Write for Form 4-26-50.

JAMES B. CLOW & SONS
201-299 North Talman Avenue Chicago 80, Illinois

WHOLESALE DISTRIBUTORS OF PIPE, VALVES AND FITTINGS FOR INDUSTRIAL USE

BREVITY—Identify by IEN - 4992 if you write the maker

New "PRV" model power roof ventilator



• Get positive, controlled ventilation, independent of wind or weather conditions, in buildings with vertical flues or duct systems. Non-overloading, backward curved wheel direct-driven by self-cooled motor. Air control accessories. Exceptional air deliveries. Pressures range from free air to 1½" SP. Weatherproof housing. Compact, rugged, precision-built, highly efficient. Easy to install and service. "One-Name-Plate" Guarantee. Call nearby Branch Office (consult classified directory), or send inquiry card.

ILG ELECTRIC VENTILATING CO., CHICAGO 41, ILL.
2912 N. Crawford Ave. Offices in more than 40 Principal Cities

FREE! Engineering data bulletin No. 1901

ILG VENTILATION for rapid air change

BREVITY—Identify by IEN - 4993 if you write the maker

Reduce size up to 50% with Bogue

TAILORED COORDINATED DESIGN VOLTAGE & SPEED REGULATORS

Bogue being the only company where both regulators and motor generator sets are manufactured under one roof has taken advantage of its position by instituting a program whereby the design of both the Motor-Generator and Regulator are tailored to take full advantage of their flexibility. The aim of this program is to secure a minimum number of components and a minimum size and weight of the complete integrated power unit.

By coordinating the design of the two components the reduction in size and weight of the regulators has averaged better than 50% over competitive designs. Our engineers will be glad to consult with you on your voltage and speed regulator problems.

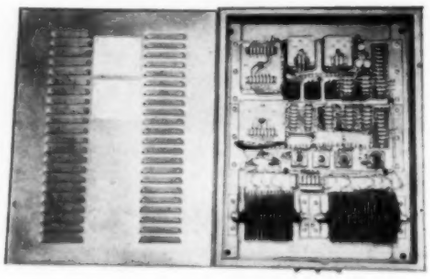


Illustration shows speed and voltage regulator used with a 5 KW, DC, 400 Cycle Motor-Generator Set. The regulators maintain the output frequency to within 1 Cycle of 400 and the output voltage to within 1% of 120 volts over the full range of no load to full load and *with the input DC Voltage varying over a 2 to 1 range.*

BOGUE ELECTRIC MANUFACTURING COMPANY
40 IOWA AVENUE • PATERSON 3, NEW JERSEY

where precision coordinated design . . . COUNTS!

SINCE 1892 SPECIALISTS IN FINE MOTORS & GENERATORS — Bogue

BREVITY—Identify by IEN - 4995 if you write the maker

FOR THESE *Extras*

LONGER SERVICE

LESS MAINTENANCE

HIGHER PERFORMANCE

use STAINLESS STEEL

FLOATS

YOU can solve virtually all your float problems by standardizing on Stainless Steel Floats from Chicago Float Works. You get longer service and less maintenance because Stainless Steel Floats resist corrosion and withstand high temperatures and pressures. Extreme strength insures them against collapsing and they always respond perfectly to level fluctuations because of permanently high buoyancy. Install our high quality Stainless Steel Floats and be sure of long, dependable operation!

WRITE FOR FREE CATALOG

This illustrated catalog gives complete details on sizes, shapes, spud connections, and engineering data on Chicago's complete line of standard or special floats.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

BREVITY—Identify by IEN - 4996 if you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE — LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

BREVITY—Identify by IEN - 4998 if you write the maker

TRUCK . . Power lift fork design rates 3 ton, hydraulic lift cylinder

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 14, Ohio

Lift movement in this new truck is by a double-acting power cylinder mounted in the center of the telescopic upright with one piston rod extending down to the upright base and a second rod extending upward to the top of the telescopic frame. Pressure is supplied by a motor-driven pump mounted on the truck to operate the upper piston rod and raise the forks for the limit of the telescopic upright, then to raise upright and forks to the maximum lift height of 120 inches.

The truck measures 83 in. in height with the lift at the bottom of its travel. It measures 145 in. when fully extended. Hoist speed for a capacity 3-ton load is 20 fpm. in upward direction, 40 fpm. downward. Lift speed increases to 40 fpm. when the forks are free. Lowering speed decreases to 36 fpm. under the same condition.

Travel is by battery or power unit to an electric motor for speed under full load to 5 miles per hour. Steering is by a center-control automotive-type mechanism. The operator rides either standing or on a cushioned seat equipped with an adjustable back rest. Safety exit is provided on both sides of the housing. A feature in the assembly lies in the oil-sealed motors and in the sealed roller bearings employed between the telescopic upright and the truck frame to practically eliminate lubricant drip as well as need for operator attention.

BREVITY—Identify by IEN - 4999 if you write the maker

CUTTING . . Plastic board particularly for meat packing plants

Source: UNITED STATES RUBBER CO.
1230-32 Sixth Ave., New York 20, N. Y.

Synthetic rubber and a new thermoplastic material are combined in manufacture of this new plastic cutting board. It is made by molding under heat and pressure. The board is available to specification, can be supplied in most any size to 3 ft. in width and 14 ft. in length. Three thicknesses are ½, ⅝ and 1 inch.

The board is easy to clean. It does not harbor bacteria. It maintains a neat and sanitary appearance. It is particularly suited for knife cutting, trimming and boning. Probable life in service is many times longer than wood.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 5000 if you write the maker

FOR FINER APPEARANCE, PERMANENT READABILITY

Identify your products with metal name plates by

CHICAGO THRIFT-ETCHING CORPORATION

We'll gladly quote, without obligation to you, on your requirements for name plates, instruction plates, dials, panels, scales, etc. We are equipped also to apply special finishes to aluminum products and parts, including ANODIZING by the exclusive Alumilite process. Write today for detailed information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1555 North Sheffield Avenue, Chicago 22, Illinois
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

BREVITY—Identify by IEN - 5001 if you write the maker

SPARE PARTS BOXES

to meet Government specifications

FOR ARMY AND NAVY ORDERS

Many Army and Navy contracts require that spare parts be furnished in specially designed boxes. Stackbin has specialized in the fabrication of spare parts boxes to meet exacting Government specifications. The assemblage is complete, including all-welded sheet metal construction with proper fittings and hardware. In any quantity, in minimum time.

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 5002 if you write the maker

TAPER-LOCK SHEAVE

Different — Better!

Another Dodge "first"—the simplest, surest mechanism ever devised for holding wheels to shafts! No flange, no collar, no protruding parts. Slip it on, line it up and tighten while sighting. Holds fast, with the firmness of a shrunk-on fit, yet disengages easily, positively! Available from distributors' stocks in big range of sizes — A, B, C and D grooves. *WRITE* today for complete data.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Indiana

DODGE
of Mishawaka, Ind.

FIRST IN POWER TRANSMISSION MACHINERY

BREVITY—Identify by IEN - 5003 if you write the maker

IS YOUR ROOF CHEATING YOU?

If your roof isn't giving you the same complete service in its twentieth year as it did in its first, it is time for a check-up. Equipment and merchandise need the lasting protection that a Ruberoid Bonded Roof can give. A leader in the built-up roofing field for almost 60 years, Ruberoid can supply materials and specifications to meet any roofing conditions.

Ruberoid makes every type of built-up roof—Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, and smooth or gravel-and-slag surfaced asphalt—in specifications to meet every need. Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of uniform quality, centralized responsibility, more economical operation with Ruberoid Built-Up Roofings. Write for Ruberoid's Built-Up Roofing Specification Book.

The RUBEROID Co.
Executive Offices:
500 Fifth Ave., New York 18, N. Y.

MORE YEARS FOR YOUR DOLLAR WITH RUBEROID BUILDING MATERIALS

BREVITY—Identify by IEN - 5004 If you write the maker

Miniature Multipole Relays for Jet-Propelled Jobs!

AIRCRAFT OR GUIDED MISSILE

These miniature d-c relays—only 1¼" D x 1⅝" H (excluding terminals and mounting studs)—insure faithful performance under severe operating conditions such as encountered in missiles and aircraft. Designed for USAF specification MIL-R-5757, they are supplied for use in 200°C. (type A) and 85°C. (type B) ambient temperatures. Available in contact combinations of 2, 3, 4 and 6 poles and rated 2 amperes, 26.5 volts D.C. and 115 volts, 400 cycles A.C.

Write for Data Bulletin 2420

STRUTHERS-DUNN

5,348 RELAY TYPES

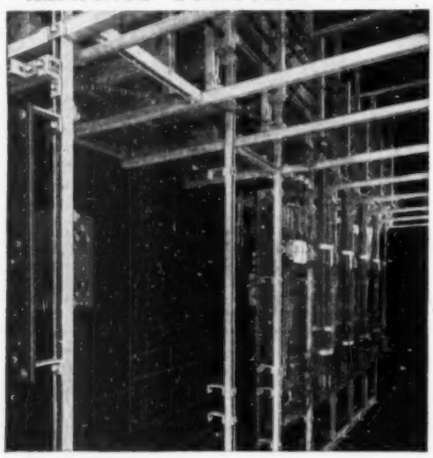
Struthers-Dunn, Inc., 150 N. 13th St., Philadelphia 7, Pa.

BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

BREVITY—Identify by IEN - 5005 If you write the maker

FLEXIBLE UNISTRUT

USED IN AMERICAN SUGAR REFINING COMPANY PLANT



Picture shows how Unistrut channel, fittings, maple and porcelain cable clamps, support motor control equipment that operates centrifuges at the Chalmette, La. plant of the American Sugar Refining Company.

Unistrut permitted fast, on the job framing where supporting members were added and adjustments made as the work progressed. No drilling, welding, or special tools were needed. Unistrut's flexibility makes possible later changes and additions to the existing structure.

Write for **FREE** *Construction Catalog*

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd.,
Chicago 7, Ill., Dept. DS.
Please send Free Catalog No. 500—Unistrut Applications in the Electrical and Mechanical Trades.

Name_____
Company_____
Address_____
City_____ Zone_____ State_____

BREVITY—Identify by IEN - 5007 If you write the maker

TRUCK . . Two-wheel hand unit mounts hand hydraulic lift platform

Source: ALLIED MFG. & SALES CO.
4702 Rice St., Chicago 51, Ill.

Barrels, boxes, castings to 500 lb. can be loaded onto the lift platform of this new two-wheel hand truck and then "pumped" upward to 54 in. above the floor. Loads can be taken from an elevated position and lowered under control of the pump to floor level. Each stroke of the lever on the pump lifts the load abolt 1¼ inch. Lowering control is at a foot pedal. The truck rides on aluminum wheels fitted with molded rubber tires. Its frame is structural steel in welded assembly. Shop Caddy is the trade name.

BREVITY—Identify by IEN - 5008 If you write the maker

RECTIFYING . . Selenium equipment, transformer and control for dc. supply

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

For dc. power locally as needed

Rectangular housing in an assembly of sections, one upon another, encloses a 3-phase transformer, control equipment and a selenium rectifier in sectional stacks. Input can be specified at 230 or 460-volt 3-phase 60-cycle ac. Output rating is standard at 110 or 220-volt dc.

Convection-cooled assemblies rate .75 to 5 kw. Fan-cooled assemblies rate 7.5 to 25 kw. Two or more can be connected in series or parallel to increase voltage or current as required. Operating efficiency is about 84 per cent when new with power factor at 95 per cent. Overall housing dimensions are 20 or 30 in. in width, 15 or 24 in. in depth, 30 to 64 in. in height. The circuit on the ac. side in each case is a 3-phase full-wave bridge type for power input.

BREVITY—Identify by IEN - 5009 If you write the maker

RESISTOR . . Deposited carbon unit in five sizes from ¼ to 2 watts

Source: WILKOR PRODUCTS INC.
2880-84 Detroit Ave., Cleveland 13, Ohio

Boro-Carbofilm trade names new resistor manufactured by the company under license arrangement with Western Electric. It is in five sizes from ¼ to 2 watts. The resistor has excellent aging characteristics and a temperature coefficient of 20 parts per million per degree C. Application is primarily in high frequency communication and electronic apparatus. Each is characterized by stability and low noise level.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5010 If you write the maker

This completely self-contained, accurate and portable impedance bridge is always set up and ready to make measurements of RESISTANCE from 1 milliohm to 1 megohm; CAPACITANCE from 1 micro-microfarad to 100 microfarads; INDUCTANCE from 1 microhenry to 100 henrys. It includes a 1000-cycle tone source for a-c measurements and a zero-center galvanometer for d-c null detection. Its accuracy is more than sufficient for the majority of routine measurements of these quantities. Once you have tried this bridge you'll wonder how you ever got along without it. Its price, complete with batteries, is only $260.00. May we send you complete information?

GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39, Mass.
New York 6 • Syracuse 5 • Los Angeles 38

BREVITY—Identify by IEN - 5011 If you write the maker

SLITTERS AND ROLLWINDERS

For all types and sizes of roll-wound products

From cellophane to sandpaper, from bandages to brake lining, *Camachine* experience leads the way in every field of roll production. There's a *right Camachine* for all types of paper or paperboard; textiles, rubber, foil or plastic; plain, coated, laminated or tacky-surfaced materials. *Camachines* are engineered for dependable, top-quality roll production at record-breaking speeds. For information and literature regarding roll production equipment for any type of material, write to:

CAMERON MACHINE CO.
61 POPLAR ST., B'KLYN 2, N.Y.

Camachine®
First in roll production equipment

BREVITY—Identify by IEN - 5012 If you write the maker

Compare Royalite with any other thermoplastic . . . check off your specific needs . . . you'll find Royalite the perfect answer to many existing problems . . . the key to greater freedom in design and construction.

- ★ Flameproof
- ★ Lightweight
- ★ Non-splintering
- ★ Non-warping non-corrosive
- ★ Tough
- ★ Highly resistant to impact
- ★ Waterproof, stainproof
- ★ Not affected by oils, most acids, alkalies
- ★ Different colors, make classification easy
- ★ Stable under changing atmospheric conditions
- ★ Exceptional electrical insulating properties
- ★ Low rate of heat conductivity

When Royalite replaces other materials it does a better job with added economy and durability.

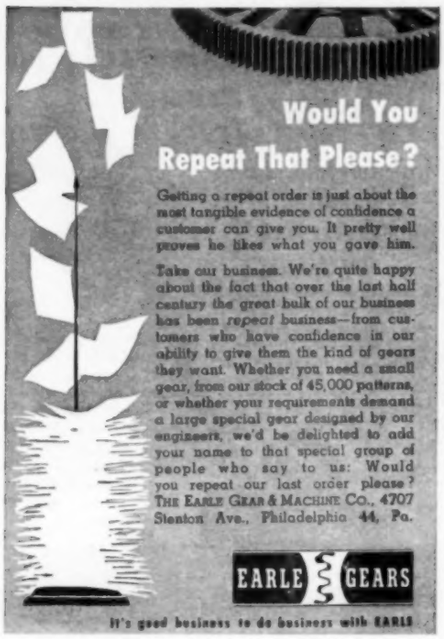
The United States Rubber Company will be glad to assist you with any specific application of Royalite you may suggest. Write today.

U.S. Royalite
STANDARD OR FLAME RESISTANT

SEE NEXT PAGE FOR LIST OF U. S. ROYALITE FABRICATORS

UNITED STATES RUBBER COMPANY
2638 North Pulaski Road, Chicago 39, Illinois

BREVITY—Identify by IEN - 5014 if you write the maker



BREVITY—Identify by IEN - 5015 if you write the maker

Royalite do your product?

Here's proof that Royalite will not sustain combustion after being subjected to the intense heat of a blow torch!

as Royalite

CONSULT THESE EXPERIENCED FABRICATORS OF ROYALITE

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General Plastics Corp., 723 W. Broadway, Glendale 4
Engineering Plastics Co., 1475 El Mirador Dr., Pasadena 3
National Plastics Industries, 425 Divisadero St., San Francisco
Hollywood Plastic Arts, 503 W. Olympic Blvd., Los Angeles 15
Swedlow Plastics Co., 3527 District Blvd., Los Angeles 22

COLORADO
Pikes Peak Plastic, 5 W. Cucharras St., Colorado Springs
Denver Plastics, Inc., 260 S. Dale Court, Denver 9

FLORIDA
Plastics Design & Mfg. Company, Box 61, Tallahassee

GEORGIA
Gladwin Plastics, 342 Courtland St., N.E., Atlanta

ILLINOIS
Arvem Plastic, 1539 N. Throop St., Chicago 22
Associated Plastics Fabricators, 164 N. May St., Chicago 7
J. R. Carroll Company, Corner Carroll and Albany Avenues, Chicago
Cortland Industries, Inc., 4545 W. Cortland Street, Chicago 39
Neo Products Co., 2534-38 S. Kedzie Ave., Chicago 23
G-Lin Products, 3755 Kedzie Avenue, Chicago 18
Precision Plastic Products Inc., 626 W. Lake St., Chicago 6

INDIANA
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MARYLAND
Fawn Plastics Co., 2902 Hamilton Ave., Baltimore 14

MICHIGAN
Cadillac Plastic Co., 651 W. Baltimore, Detroit 2
Imperial Industries, 4435 Walker Ave., Wayne
Kline Mfg. Co., 50 Cottage Grove S.W., Grand Rapids 2
Reynolds Plastics, Inc., 3445 W. Forth St., Detroit
Fabri-Kal, 242 East Kalamazoo Avenue, Kalamazoo
Woodall Industries Inc., 7565 K. McNichols Rd., Detroit 34

MINNESOTA
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Plastics, Inc., Chestnut & Ryan Sts., St. Paul 2

MISSOURI
Regal Plastics Co., 719 Main St., Kansas City

NEBRASKA
Omaha Plastics Co., 1470 S. 16th St., Omaha 9

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Stokes Molded Products, Inc., Taylor St. at Webster, Trenton 4
Thermacote Co., 320 Jefferson St., Newark 5
Van Beek Industries, 23 Park St., Orange

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Pearson-Berlinghof, Inc., 18 North State Street, Newton
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WISCONSIN
Midland Plastics Inc., 237 N. Water St., Milwaukee 2

The United States Rubber Company at 2638 North Pulaski Road, Chicago, Illinois, has complete Engineering, Designing, and Styling Departments to assist fabricators on the technique to employ, and in the art of fabricating most efficiently with ROYALITE.

BREVITY—Identify by IEN - 5017 if you write the maker

CLEANING . . Portable equipment washes, rinses, dries painted walls

Source: QUAKER MAINTENANCE CO. 122-26 W. 18th St., New York 11, N. Y.

Handeasy designates a new attachment developed by the company for use with its wall-washing equipment to apply on uneven surfaces such as corrugated metal ceilings, window trim, pipe risers, moldings, painted rough brick and similar surfaces that the initial machine was not able to handle. The new attachment with the original standard trowels now make the machine suitable for any interior surface of a building that can be cleaned to advantage rather than repainted.

Cleaning solution made by diluting a concentrate supplied by the company is held in one of two tanks. The other holds warm water for rinsing. Pressure is built up in both tanks by operating a hand pump in the rinsing tank to about 25 pounds. This pressure forces the cleaning solution or the rinse water to a valve in the operator's hand with which to admit fluid to the trowels or to the synthetic sponge that forms a part of the new Handeasy attachment. The sponge distributes to the fingerless terry-cloth mitt in which it is positioned. Cleaning is accomplished by initial application of the cleaning solution over a small area followed by application of rinse water on the same area with final drying by a third pad.

BREVITY—Identify by IEN - 5018 if you write the maker

DRILLING . . Turret type machine mounts six selective speed spindles

Source: BURG TOOL MFG. CO. 3743 Durango Ave., Dept. IE, Los Angeles 34, Calif.

Model A No. 2 designates new machine which the company has added to its line of turret-type equipment, previously described IEN-4531-48. The new and larger size rates ¾ in. in steel. It has an 8-in. stroke and 17 by 33-in. table. Throat depth measures 11¼ inches. The spindles are mounted on tapered adjustable roller bearings.

The indexing turret on the face of the machine carries six spindles, each in interchangeable unit assembly, so a sequence of spindles can be set up for a given job. The spindles are equipped with individual clutches to engage the drive at the center of the turret as each spindle is brought into operating position by power action initiated by short movement of the capstan operating wheel.

Each spindle locks in active position for the feed movement. Pushbutton switches are preselected for desired operating speeds so no attention to speed, from one spindle to the next, is required of the operator. The machine is suited particularly for carbide tools and for second-operation drilling.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

BREVITY—Identify by IEN - 5019 if you write the maker

THE "Easy-tote" TRADE MARK REGISTERED DEPARTMENTAL TRUCK

USERS LIKE THEM . . . 70% REORDER

70% of users reorder . . . . proof of the lower cost, easier handling Easy-totes provides on countless, small, important jobs. Large and small plants use this all-purpose truck to out-maneuver and out-perform conventional hand trucks. There's nothing also like it. Three wheel arrangement, swivel caster in rear, low tilting baseplate (16" x 22"), adjustable hook and crank permit one man to handle loads up to 400 lbs. quickly, *without lifting injuries.* No need to "muscle the load" . . . . see 1-2-3 below. Only $28.80 . . . . and deliveries are good at this time. NOW! Write for FREE Bulletin E-3. *Some territories open — write*

THE EASY TOTE PRODUCTS CO.
P. O. Box 86 Buffalo 17, N. Y.
Factory and Warehouse, Lancaster, N. Y.

BREVITY—Identify by IEN - 5020 if you write the maker

All metal AUTOMATIC PRESSURE REGULATOR for steam, air, gas, water or oil

Sylphon Pressure Regulator No. 952, one of a complete line.

● This Sylphon Regulator is used for reducing from high to low pressure . . . or to insure a constant delivery pressure when supply fluctuates. Operates automatically. All metal construction. Rugged, dependable, long-lasting. Write for Catalog JN-100.

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Temperature Controls - Bellows Devices - Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

BREVITY—Identify by IEN - 5021 if you write the maker

CASTELL LOCKTITE HOLDER AND IMPORTED LEAD

—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL (black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTELL PENCIL COMPANY

BREVITY—Identify by IEN - 5022 if you write the maker

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New AMERICAN BUNDLING CHAIN with Automatic Lock

A complete unit . . . ready to use. Eliminates links, shackles, pins, wires. ~~Speeds Material Handling.~~ Bundles can be made up quicker, handled faster and safer, and stored indefinitely without loosening. Simple to unlock and unhitch. *Write today for Bulletin DH-266 on ACCO Bundling Chain with drop-forged Automatic Lock (Patent Pending).*

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BREVITY—Identify by IEN - 5023 if you write the maker

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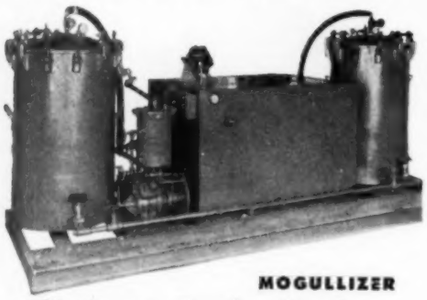
LAVELLE Rubber Company
1811 W. Hubbard, Chicago, Ill.
WRITE, WIRE, PHONE SPECIFICATIONS — TODAY!

BREVITY—Identify by IEN - 5024 if you write the maker



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BREVITY—Identify by IEN - 5025 if you write the maker

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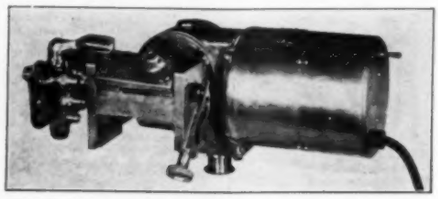
BREVITY—Identify by IEN - 5026 if you write the maker

METAL SPRAYING . . Electric gun feeds, melts and sprays metal wire

Source: METALLIZING CO. OF AMERICA
3518-22 W. Carroll Ave., Chicago 24, Ill.



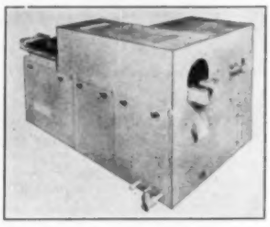
Shafts, rolls, machine parts, suitable for application between centers or in a lathe chuck, can be metal sprayed by application of this new gun in position on the lathe carriage. The unit weighs 20 lb. and employs a 1/20-hp. motor for wire feed at uniform speed. The gun will melt, atomize and spray No. 15 B. & S. to $\frac{1}{16}$-in. wire at speeds to 18 lb. per hr., based on aluminum and nickel, or 80 lb. per hr. based on zinc.

Hose connections are provided for oxygen, acetylene and compressed air employed in the melting and spraying action. Consumption is about 44 cfh. of acetylene and 68 cfh. of oxygen when spraying $\frac{1}{16}$-in. stainless steel. Air required to atomize and carry the metal to the surface being coated is about 16 cfm. at 45 pounds. Mogulectric is the trade name.

BREVITY—Identify by IEN - 5027 if you write the maker

HEATING . . Induction equipment heats aluminum to forge or extrude

Source: MAGNETHERMIC CORP.
703 Andrews Ave., Youngstown 1, Ohio



Capacities of 6,000 and 8,000 lb. per hour in single-coil design, 10,000 and 12,000 lb. per hour in three-coil design, have been added to the company's line of transformer-type 60-cycle induction heating furnaces to bring aluminum billets and blanks up to forging or extruding temperature. Overall capacity in the line now includes units rating 400 to 12,000 lb. of aluminum ingots per hour based on temperature of 850 deg. F.

The equipment is designed for location at the processing machine where its characteristically cool operation is an advantage. Coil diameters range from 3 to 13 inches. Overall dimensions of the smallest assembly are 66 by 42 by 36 inches. The largest measures 114 by 69 by 61 inches. Input is from a 3-phase 60-cycle ac. line of specified standard voltage. No warm-up interval is required. The furnace can be put into operation to deliver hot pieces in about 3 minutes.

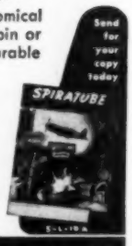
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See the suggested procedure for the index, page 110

BREVITY—Identify by IEN - 5028 if you write the maker

The Portable Pipeline to Profit and Savings

If it can ride on air, the best, most economical route for your materials—to box car, bin or production destination—is via light, durable and non-collapsible Spiratube. Its flexible, unobstructed passages convey maximum pay-load around corners, up and down, to hard-to-get-at places—and with minimum power-demand. Portable—it ideally fits into present systems. Sold through well-stocked distributors—Coast-to-Coast. Tried and approved by leading firms throughout the world.



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Sizes for all requirements.

BREVITY—Identify by IEN - 5029 if you write the maker

The Colson Universal Drum Truck

for fast, safe handling of drums and barrels

One man, with the COLSON universal drum truck, easily does the work of two. It locks any size container, lifts it easily and carries it with the weight evenly balanced over the wheels.

Other work-saving COLSON equipment: hand trucks, platform trucks, Lift-Jack systems, wheels and casters to meet every application. Write us or consult your phone book for the COLSON office near you.

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ELYRIA, OHIO
CASTERS • LIFT-JACKS • INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 5030 if you write the maker

for the one man in your organization to whom **FITTINGS** are **IMPORTANT** *we developed*

"ERMETO"

Now you can make tube and pipe connections at 1000 psi and above with NO FLARING, NO THREADING, NO WELDING, NO SOLDERING! The patented design of Weatherhead ERMETO Fittings permits installation with no tools but a wrench. Easy to take apart and re-tighten with a pressure tight joint. *Maintenance time saved is production time earned!*

Sleeve is heart of Ermeto fitting. Sleeve and nut slip onto tube; end of tube inserts into body of fitting.

Tighten nut; pilot of sleeve contracts engaging outer surface of tube.

Fully tightened. Tube end butts tight against body shoulder. Nut presses sleeve bevel causing entire sleeve to clamp tube. Forces acting on sleeve cause it to bow, give it a spring action which holds tension between body and nut—prevents loosening.

You can forget psi when you specify ERMETO. Designed for high-pressure use, ERMETO fittings have so simplified and cut costs that it pays to standardize on ERMETO FOR ALL JOINTS. The advantages in simplified inventories are obvious. ERMETO meets J. I. C. requirements. Made in sizes ¼" to 2" O. D. in steel, stainless steel and brass.

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FIRST IN HYDRAULIC CONNECTIONS
The Mark of Quality
WEATHERHEAD
Plants at Cleveland, Ohio; Angola and Columbia City, Indiana; and St. Thomas, Ontario

BREVITY—Identify by IEN - 5032 if you write the maker

Test for Electrical
LEAKAGE • SHORTS • BREAKDOWN
with
"HYPOT"
JUNIORS

HIGH POTENTIAL TESTING INSTRUMENTS

WRITE FOR BULLETIN 4A

- ONLY ONE instrument necessary to make high potential tests for leakage, breakdown or shorts!
- PORTABLE, with rugged steel case...Operates in any position!
- SAFE to use, with protected test leads, shielded high voltage, grounded case!
- SIMPLE—only three easy steps to make a complete test!
- VISUAL INDICATIONS from neon lights give positive test results. Audible test indication for leakage also available.
- RANGES 0-1500 to 0-6000 V.A.C. output. Other "Hypots" to 50,000 V.A.C. output at 5 K.W.
- WRITE for complete data on "HYPOTS" for your jobs.

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BREVITY—Identify by IEN - 5033 if you write the maker

MAKE THIS FREE TEST
and discover for yourself there's no better direct positive print paper

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T. M. REG. U. S. PAT. OFF.

NOW you can have longer-lasting direct prints that fairly sparkle with contrast

You get blacker-than-ever lines on whiter-than-ever backgrounds with DIRECTO, the new, improved Dietzgen semi-dry process that gives you ready-to-use direct positive prints in seconds. DIRECTO prints fight wear and tear, and even when oil-soaked, grime-smeared, sweat-stained they retain amazing legibility.

You are assured of uniformity because DIRECTO developing solution is chemically stable, always brings out strong black images, whether mixed fresh or old. And there's no washing, no lengthy drying, no negative needed. DIRECTO prints are made direct from your translucent original.

Compare this remarkable material with any other you have ever used. DIRECTO is available now with blue, pink, yellow and green backgrounds, as well as white, for convenient color coding. Send for samples.

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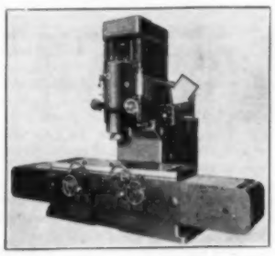
EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

BREVITY—Identify by IEN - 5035 if you write the maker

MILLING . . Vertical machine equipped with electronic feed control

Source: REED-PRENTICE CORP.
675-79 Cambridge St., Dept. N, Worcester 4, Mass.



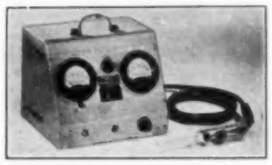
New 60-in. size has been added to the company's No. 4 vertical milling machine, previously described IEN-6543-45 as a 48-in. machine. The new assembly mounts a table with 24 by 96 in. of working surface and provides a 60-in. longitudinal travel. The reversible spindle is driven by a 10-hp. motor with speed change in 18 steps between 30 and 1,200 rpm. As in the previous machine the cross-slide movement is through 24 inches. Vertical travel of the spindle head is through 12 inches. Top of the table to the spindle nose is minimum at 12 in., maximum at 24 inches. Throat dimension is 33 inches.

Rapid traverse at 180 ipm. for the table and 120 ipm. for the cross slide is powered by two 3-hp. ac. motors. The table, the cross-slide and the vertical slide each are equipped with 1½-hp. dc. motors with electronic control for infinitely-variable rate between ½ and 25 ipm. Control centers at the housing indicated in the illustration. A meter reads spindle load. Dynamic brakes prevent coasting. The new machine measures 192 by 115 in. at the floor line. It weighs 24,000 pounds. Detail illustrated information covering both sizes is contained in a new six-page folder, "No. 4 Vertical Miller and Die Sinker."

BREVITY—Identify by IEN - 5036 if you write the maker

TESTING . . Electronic detector uses halogen to find a vacuum leak

Source: DISTILLATION PRODUCTS INDUSTRIES
755 Ridge Road, Rochester 3, N. Y.



Model LD-01 is a new electronic instrument employing a platinum element in a glass tube. Electrical connections to the main housing include a circuit through which the platinum can be heated. The glass tube is sealed into a space to be checked for vacuum leakage or is mounted in the space with a stuffing-box fitting. The space is then pumped down to a moderate vacuum maximum at 1 micron of mercury.

A jet of Freon gas, or other gas containing halogen vapor supplied by the user, is directed against the vacuum enclosure at points suspected of leaking. When the jet strikes a leak the halogen gas enters the vacuum space where, upon reaching the hot platinum element, it causes the element to emit positive ions.

Resulting change in potential is amplified to provide an indication on the leak-rate microammeter mounted on the housing face. A second microammeter indicates ion current and knobs provide adjustment for current and leak rate and for sensitivity of the indication. The housing measures 10¼ by 8 by 7½ inches. The element tube is 5 in. in length and carries a 3-in. tube extension for sealing or gasketed assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5037 if you write the maker

THE MATEER ELECTRIC FILLER HANDLES THEM ALL!

G. DIEHL MATEER & CO.
Lincoln Highway • Devon, Pa.

BREVITY—Identify by IEN - 5038 if you write the maker

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Only Multipress Offers These Advantages For Better, Faster, Lower-Cost Production

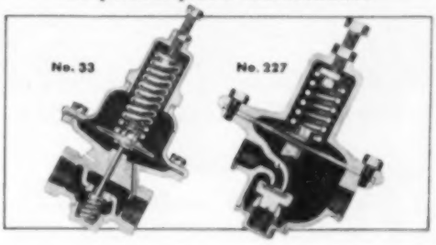
Pressure adjustment is infinitely variable • Pressing speeds up to 530 inches per minute • Sizes and pressures from one ton to 50 tons • Stroke can be preset to either distance or pressure limits • Approach and pressing speeds are independently adjustable • Controls for ram dwell and sequence operations • Exclusive Vibratory Ram Control for rapid repeat-stroke action • Manual or automatic controls, with dual controls for safety • Adaptable to widest range of tooling and feeding attachments.

The smooth, oil-hydraulic action of Multipress delivers ram pressures in a steady, even flow of controlled power — and not in hammer-like blows. This means less die wear, less damage to parts, quieter action, and many other advantages. Multipress is easily preset to exact requirements of each job — no special training needed for rapid, high-quality operation. Write.

DENISON HydrOIlics
The DENISON Engineering Co.
1110 Dublin Rd., Columbus 16, Ohio

BREVITY—Identify by IEN - 5039 if you write the maker

MASONEILAN
REGULATORS
Solve Pressure Reducing Problems
with Dependable Operation and Exceptionally Low Maintenance



You can count on Masoneilan Reducing Valves . . . for steam, water and air service . . . to reduce waste, cut costs and save money. That is why production and maintenance men in hundreds of plants use and recommend them. Their experience proves Masoneilan Reducing Valves provide accurate control and require minimum maintenance.

No. 33 for steam and air service — sizes from ½" to ¾". Reduced pressure ranges 2-20; 20-40; 40-100 psi. Maximum working pressure 200 lbs.

No. 227 for water service — sizes ¾" to 2". Reduced pressure ranges between 10 and 60 psi. Maximum working pressure 150 psi. Also available for air service from ¾" to 1".

MASON-NEILAN REGULATOR COMPANY
1188 ADAMS STREET
BOSTON 24, MASS., U. S. A.

BREVITY—Identify by IEN - 5040 if you write the maker

PRATT & WHITNEY
DiaForm WHEEL FORMING ATTACHMENT

is an inexpensive, portable, precision tool. By following a simple template...

For complete details address any P&W Branch Office . . . Birmingham • Boston • Chicago • Cincinnati • Cleveland • Dallas (The Stanco Co.) • Detroit • Houston (The Stanco Co.) • Los Angeles • New York • Philadelphia • Pittsburgh • Rochester • St. Louis • San Francisco. Export Dept., West Hartford, Conn.

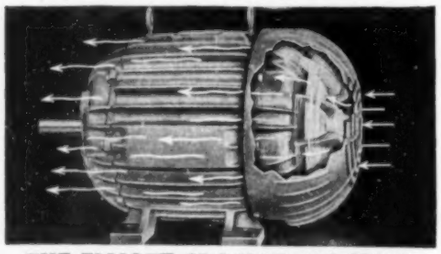
BREVITY—Identify by IEN - 5041 If you write the maker

FAFNIR Ball Bearing Power Transmission Units

THE FAFNIR BEARING COMPANY
NEW BRITAIN, CONN.

FAFNIR BALL BEARINGS MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 5042 If you write the maker



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Completely enclosed, there's no way in for dirt, dust, moisture or fumes. But there's an easy out for heat—via the 150% increased radiating surface of the many radial fins, plus the fan-driven air blast along and around the fins and frame. Cleans itself, too—the air blast gives dirt and dust the quick brush-off.

The C-W Sealedpower Motor is ideal for any service within its capacity range—proven by its 10-year service history. Available equipped with the newly designed C-W Brake . . . Also in explosion-proof construction. Bulletins from Elliott Company, Dept. IN, Jeannette, Pa.

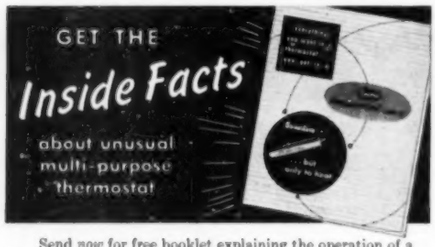
CW-31

ELLIOTT COMPANY General Offices & Main Plant Jeannette, Pa.

CROCKER-WHEELER DIVISION . . . AMPERE, N. J.

Branch Offices and Representatives in Principal Cities
Elliott Approved Service Shops Cover the Country

BREVITY—Identify by IEN - 5043 If you write the maker



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SENSITIVE...*but only to heat*

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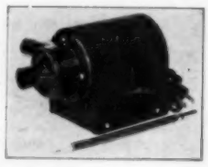
Please send me the Fenwal booklet "Everything you want in a thermostat."

Name..... Position.....
Company.....
Street.....
City..... Zone..... State.....

BREVITY—Identify by IEN - 5044 If you write the maker

PUMP . . Miniature centrifugal made of rubber for corrosion resistance

Source: CORMAN-RUPP CO.
P. O. Box 396, Mansfield, Ohio



Rubber impeller is permanently molded to a stainless-steel shaft in this new Mansfield centrifugal pump. Impeller and shaft operate inside a rubber housing of molded design. It contains the inlet and outlet openings. The shafts extend through a rubber protecting diaphragm and an aluminum face plate that provides a means to mount the housing on the motor frame. The impeller shaft is carried by the motor shaft so no additional bearings are required.

Two types include a skeleton assembly in which the motor and a cooling fan on its outer shaft extension are exposed, and the enclosed assembly shown the illustration. Three sizes employ 1/200 to 1/33-hp. motors and provide an overall range between 1.3 gpm. at 10-ft. head and 8.4 gpm. at 2-ft. head. Wire leads or extension cords can be specified.

BREVITY—Identify by IEN - 5045 If you write the maker

BRAZING . . Magnesium rod for magnesium casting repair, build-up

Source: ALL-STATE WELDING ALLOYS CO.
271-5 Ferris Ave., White Plains, N. Y.

Also will join magnesium sheet

No. 61 designates new magnesium rod suitable for application by inert-gas shielded-arc equipment or by straight torch brazing with the company's No. 61 Brazaloy flux. Working temperature is 1,080 deg. F. The rod is available in 3/16-in. diameter by 18 in. length in 5-lb. standard packages. One pound of the flux is required for each 5 lb. of rod.

BREVITY—Identify by IEN - 5046 If you write the maker

BATTERY CHARGING . . Rectifier and control for automotive batteries

Source: FOX PRODUCTS CO.
4718-22 N. 18th St., Philadelphia 41, Pa.

Output rating of this new portable Type-KW Power Charger is 8.3 volts and 100 amperes. Operation is on 110-volt 60-cycle ac. Input with current demands to 15 amperes. The charger is characterized by its use of a temperature-sensing element that is placed in a battery cell to actuate an electronic circuit. The element cuts off the charge when the battery reaches a predetermined temperature. The element takes the place of timer control. Additional safeguards are provided to prevent incorrect hookup and to open the charging circuit if the element is not in place in the battery. Overall size is 7¼ by 6½ by 15 inches. Weight is 38 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 5047 If you write the maker

Uniform, Clean, Heat from *Glass Plates!*

RA-GRID HEATER PLATE

9 sizes: ranging from 6 x 14" to 16 x 28"
Thickness: ¼" **Heat:** Up to 300° F.
Voltage: 230 max. for 16 x 24" plates
Connections: Two terminals for connection of wires

CROSS SECTION
Grid
Glass
Terminals

Here is pure, uniform electrical heat—radiated from a pane of glass!

Smokeless, dustless, flameless radiant heat from a paper-thin aluminum grid fused to the back of a strong, tempered glass panel. Think of the places in your production process—in your *product itself*—where heating or drying can be done faster, easier, safer, cheaper with this remarkable new unit. Want to know more? Send today for our technical folder. Write to Dept. IEN-5.

RA-GRID HEATER PLATES
BLUE RIDGE GLASS CORPORATION • KINGSPORT, TENN.

BREVITY—Identify by IEN - 5048 If you write the maker

Actually combines 3 types of oven-heating . . . with amazing results in heat-processing

Burners are inverted, in this type of fast-speed "Una-Ray" Oven for drying wallpaper print and vinyl coated paper. Provides—with safety!—the higher temperatures needed for drying plastic coatings.

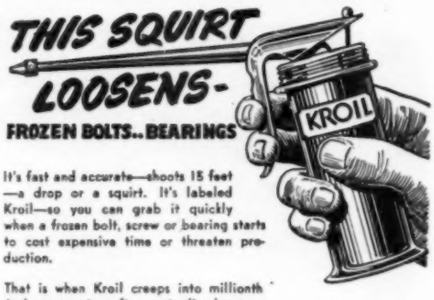
◆ THE CARBOMATIC "UNA-RAY" OVEN (gas-fired) combines the advantages of three types of oven-heating: (1) infra-red radiation, (2) convected heat, (3) heated air, with added turbulence. Adapted to a wide range of industrial heat-processing and drying operations, this new oven cuts equipment cost and reduces installation space required . . . provides instant heat, with record efficiency in heat utilization and lowest fuel expense . . . speeds up operations . . . sets new safety standards . . . decreases rejects and spoilage . . . insures lowest-cost, more uniform, highest-quality production. Temperatures are controlled accurately and automatically—in any number of different heat zones. A big step forward in oven design-engineering!

Write for Bulletin N-3

CARBOMATIC CORPORATION, Pioneer Mfrs. of Infra-Red Heat Generators
24-01 47th STREET LONG ISLAND CITY 3, N. Y.

CARBOMATIC "UNA-RAY" OVEN

BREVITY—Identify by IEN - 5049 If you write the maker



It's fast and accurate—shoots 15 feet—a drop or a squirt. It's labeled Kroil—so you can grab it quickly when a frozen bolt, screw or bearing starts to cost expensive time or threaten production.

That is when Kroil creeps into millionth inch spaces to soften rust, dissolve gum and supply lubrication to loosen the parts. It's fast and it's positive.

"Kano Kroil always opens up the tight fitting covers on fire extinguishers for us. It is truly a wonderful preparation. We have found such covers we could not force off with a blow of a hammer. Several minutes' seepage of Kroil did the trick," so says a service organization for fire extinguishers.

Kroilers are priced at $1.50 each and are well worth it. As an inducement to try Kroil we offer the combination of one Kroiler and one gallon of Kroil—(listed at $3.50) for $4.75, f.o.b. factory.

If you are not one of the 8,500 industrial plants already using Kroil, send for a gallon on the proposition that it will loosen the most stubborn frozen part or you get your money back.

KANO LABORATORIES 1071 Thompson Lane Nashville 11, Tenn

BREVITY—Identify by IEN - 5050 If you write the maker

No More Rummaging Through Stacks of Drills

No more running out of drills—your entire stock can be seen at a glance. Each size of drill has its own compartment with rounded bottom for easy selection. You can store dozens of small drills and several large ones in their own compartments. Built-in pricing or inventory system eliminates the need for cost sheets, and will keep a record of drills on hand. *Specifications:* 14½" long, 7¼" high, 7¼" deep. Hammerlin baked enamel finish over rugged steel. Made in three models for fractional, number or letter drills.

Write for circular.

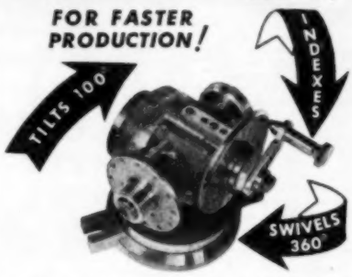
By the makers of HUOT DRILL INDEX

HUOT MANUFACTURING CO.
565 No. Wheeler St., St. Paul W4, Minn.

BREVITY—Identify by IEN - 5051 If you write the maker

THE *unusual* ELLIS DIVIDING HEAD

FOR FASTER PRODUCTION!



"Versatile" is the word for the unusual Ellis Dividing Head. This beautifully designed and built unit can extend the profit and production possibilities of your mills, grinders, drill presses and jig borers. It has 6½" swing, or 11" swing when used with riser blocks. Its fully universal action provides every needed setting, so that most work can be completed without rehandling. Work may be held between centers, or in chucks or collets. Write for catalog giving complete details!

NICHOLS-MORRIS CORPORATION
50-W CHURCH STREET, NEW YORK 7, N. Y.

BREVITY—Identify by IEN - 5052 If you write the maker

PANGBORN Hydro-Finish gives better tool room results... in a fraction of the time!

SIMPLIFY the manufacture and maintenance of tools, dies and molds with versatile Pangborn Hydro-Finish. It reduces usual costly handwork and produces a surface virtually free from directional grinding lines.

And on the production line, use Hydro-Finish to eliminate many tedious finishing operations. It reduces cost and time involved in buffing. It lessens fatigue failure and cuts manufacturing costs.

Hydro-Finish is the new, versatile impact blasting process that uses a fine mesh abrasive suspended in water. Tolerances are held to .0001 of an inch.

FIND OUT TODAY how Hydro-Finish can pay off for you. Write for Bulletin 1400-A to PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control.

Pangborn
BLAST CLEANS CHEAPER
with the right equipment for every job

BREVITY—Identify by IEN - 5054 If you write the maker

HOIST . . Multiple, hand operated, load balancing counterweight assembly

Source: J. R. CLANCY INC.
Belden Ave. & Edison, Syracuse 4, N. Y.

Equipment suitable for the operation of vertically moving doors and other equipment requiring movement in a vertical direction at intervals is offered by the company based on its design initially intended for theatrical stage application. The counterweight equipment includes a malleable-iron or steel carriage, vertical steel guide-rods and safety clamps to lock the weight in place. The weights range from 8 to 20 lb. per inch of thickness. T-bar or latticed tracks, brackets, rope locks, spreader plates, arbors and clews are available to meet given requirements as to size and load-handling capacities.

BREVITY—Identify by IEN - 5055 If you write the maker

PIPE FITTINGS . . Molded plastic units for company's ½ to 2 in. plastic pipe

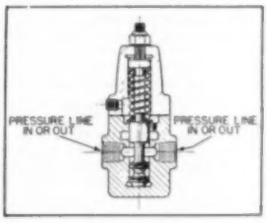
Source: CARLON PRODUCTS CORP.
10225 Meech Ave., Cleveland 5, Ohio

Elbows, tees, couplings, bushings and plugs are now available in injection-molded plastic for use with the company's rigid plastic pipe in sizes from ½ to 2 inches. The thermoplastic material from which the fittings are made is light in weight and resistant to a range of chemicals, rot, corrosion, electrolytic action. The material will not contaminate fluids, vapors or gases being handled through the plastic pipe line.

BREVITY—Identify by IEN - 5056 If you write the maker

VALVE . . Hydraulic unloader, piston design, pilot pressure operated

Source: RIVETT LATHE & GRINDER, INC.
20-24 Riverview Road, Brighton 35, Mass.



Model 8826 is a new hydraulic unloading valve. It is built in sizes from ¼ to 1½ in. in pressure ranges of 60 to 150 lb. and 500 to 1,500 pounds. Adjustment is at a spring backing up the balanced piston to a given valve at any point within its overall range. Inlet and outlet are in line with each other.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5057 If you write the maker

YOUR EASIEST WAY TO LOW-COST OPERATION

When centrifugal pumps are proportioned in size to their duties, costs are kept to a minimum. Eastern Industrial Pumps do an efficient job. Weight, space, power, and costs are reduced. Heavy-duty application with trouble-free performance is yours with minimum operating costs.

FREE Eastern Centrifugal Pump Catalog 100. 12-page, 2-color catalog offers engineering data, charts and illustrations, packed with helpful suggestions.

Write Dept. AJ today.

Eastern INDUSTRIES, INC.
296 ELM ST., NEW HAVEN, CONN.

BREVITY—Identify by IEN - 5058 If you write the maker

Engineer records month's operating time of automatic screw machine.

ARE YOU GETTING MAXIMUM OUTPUT FROM YOUR MACHINES?

G-E TIME METERS available in conduit, panel, portable models

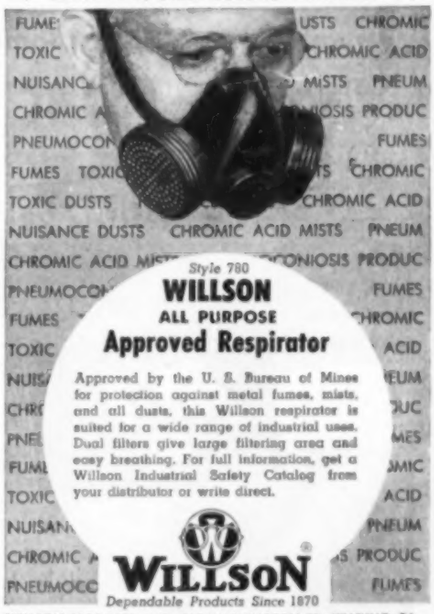
With production increased and new machinery at a premium, maximum output from present plant equipment is a must. You can check the utilization factor of your equipment quickly and easily with General Electric time meters.

G-E time meters reveal exactly how long your machines are in actual operation. They record operating time in hours, tenths of hours, or minutes . . . show idle time that otherwise might go undetected . . . afford data for more efficient machine scheduling and servicing.

For details, call your G-E representative, or write for Bulletin GEC-472, Section 603-120, General Electric, Schenectady 5, N.Y.

GENERAL ELECTRIC
603-120

BREVITY—Identify by IEN - 5059 If you write the maker



Style 780
WILLSON
ALL PURPOSE
Approved Respirator

Approved by the U. S. Bureau of Mines for protection against metal fumes, mists, and all dusts, this Willson respirator is suited for a wide range of industrial uses. Dual filters give large filtering area and easy breathing. For full information, get a Willson Industrial Safety Catalog from your distributor or write direct.

WILLSON
Dependable Products Since 1870
WILLSON PRODUCTS, INC., 217 WASHINGTON ST., READING, PA.

BREVITY—Identify by IEN - 5060 If you write the maker

does the job better!

ROCKWOOD ball VALVES

300 P. S. I. WORKING PRESSURE

The *most dependable and efficient performing* Valve on the market. Every Rockwood Valve is designed and built to give you longer and more economical service.

The full round flow — leak proof service — quick opening and closing features of the Rockwood Ball Valve give you better and faster service with no maintenance. When you install a Rockwood Valve on the line, it does the job better.

For use in oil refineries, food, paper, textile, chemical and rubber plants, etc. Write for sizes and prices and for bulletin V-4.

Distributors in all principal cities.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 5061 if you write the maker

GOLD SEAL TAPE GOES FURTHER...

Here's why... **Guaranteed Footage** — you get full measure in every roll. **No Waste** — Gold Seal tears evenly, wraps smoothly, conforms closely to uneven surfaces. **High Dielectric Strength** — less footage is needed per job. **Lasting Tack** — Gold Seal sticks to the job (in cold or moisture). **Doubly Protected** — each roll is cellophane-wrapped and packaged to reach you factory-fresh!

Ask for Gold Seal — the best buy in tape. Jenkins Bros., (Rubber Division), 100 Park Ave., New York 17.

◀ Single Rolls or 10-Roll Containers

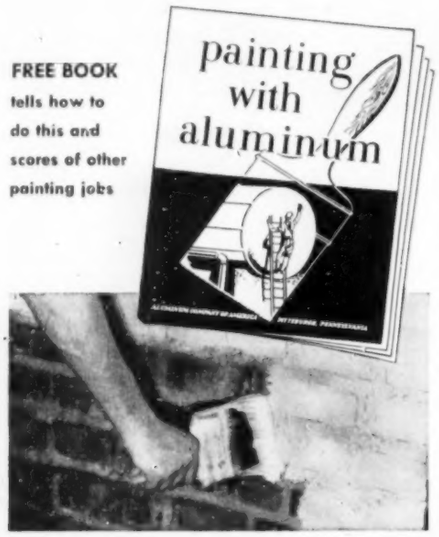
JENKINS Gold Seal Tape
FRICTION...RUBBER

MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

BREVITY—Identify by IEN - 5062 if you write the maker

How to brighten dark rooms with One Coat

FREE BOOK tells how to do this and scores of other painting jobs



31 PAGES OF USEFUL PAINTING INFORMATION

NEW FREE BOOK TELLS HOW to get better paint results at lower cost . . . how to buy and apply the right aluminum paints.

Alcoa does not make paint. We have prepared this book so you can know about the many new improvements in aluminum paints; can buy the correct paints without lengthy specifications and tests; can apply them best for lasting protection and good appearance.

This book gives worth-while maintenance painting tips; includes coverage tables, tells what aluminum paints to use inside and out, on wood, metal, masonry and heated surfaces. Send for your free copy. Attach the coupon to your letterhead and mail now.

ALUMINUM COMPANY OF AMERICA
Paint Service Bureau, 1786E Gulf Bldg., Pittsburgh 19, Pa.
Please send me a free copy of: *"Painting with Aluminum"*.

Name (Please print) _____
Address _____
City _____ State _____

Look for this shield on aluminum paints made by many paint manufacturers using ALCOA PIGMENTS.
The RIGHT aluminum paint for this job is ALUMINUM METAL & MASONRY PAINT.
ALCOA ALBRON

BREVITY—Identify by IEN - 5064 if you write the maker

TRUCK . . Load clamp attachment will lift and carry 6 cotton bales

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

Holding pressure to grip a load on its two sides is to 6,000 lb. at the heel of the arms on this new attachment. It has been designed to mount on the company's engine and motor-driven trucks to 7,000-lb. rating and on the engine-driven pneumatic-tired 3-ton Yardlift-60 machine. The attachment is designed to handle bales, large boxes, crates and other heavy bulky objects able to withstand the lifting squeeze.

Side arms and guides are made of rolled-channel sections of alloy steel and are operated by separate double-acting hydraulic cylinders and pistons for the retracting and clamping movements. An auxiliary valve controls the clamp. A check valve in the hydraulic line prevents loss of clamping pressure. The arms extend from a minimum opening of 24 in. to a maximum of 95 inches. Overall width, with the arms closed, is 67 inches.

The attachment is not detachable and cannot be used interchangeably with standard load-carrying forks. Interchangeable clamp arms, however, apply on the slide arms and forks which can be bolted to the slide arm are available. There is no loss of lift-height capacity when the new clamp is installed. Load-carrying capacity is reduced depending upon the material to be handled and the type of clamp arms involved.

BREVITY—Identify by IEN - 5065 if you write the maker

CONTROL . . Electronic equipment guards commercial oil burner operation

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

An electrode unit for gas-pilot flame detection, a photoelectric unit for main-burner flame detection and master-control assembly make up this new combustion-control equipment for use in connection with a commercial oil burner. After it has been installed and put into operating order, the oil valve cannot open if the gas pilot does not ignite and the supply of fuel is cut off from the main burner if the oil flame does not ignite. Following cutout, the motor driving the burner blower continues to operate for 30 sec. to purge the nozzle of unburned fuel. The equipment then locks itself out against further operation until a button is pressed on the face of the master-control housing.

A self-checking circuit prevents starting the equipment unless the main-flame and pilot-flame detectors are in correct operating condition. Each of the units in the installation can be removed from the front of a mounting panel without disturbing the connections. The motor circuit is controlled directly by a built-in contactor in ratings to ½ hp. on 110-volt single-phase 60-cycle ac. A magnetic switch is available to apply with larger motors and multi-phase operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5066 if you write the maker

For Every Industrial Need!

VACO BREAK-PROOF SHOCK-PROOF Screw Drivers

FL 34 FLASHLIGHT DRIVER

Fire Safe Handles — Vaco S/B handles are slo-burning to reduce fire hazards. You'll like their "feel" as well as safety feature.

Large or small, square shank or round, extra long or stubby, there IS a Vaco screw driver for every screw used in your plant. Whether it's a regular, Phillips, Reed and Prince, screw holding, clutch head or Allen bit, Vaco makes 'em all. To find out how Vaco can serve you, write for:

FREE 30-Page Catalog

A gold mine of information on all types of drivers, both screw and nut. Full of tables to fit the screw driver to the screw. Fully illustrated with drawings of most screw heads, photographs of drivers and wide assortment of kits and specialty items. Order your copy, *today!*

VACO PRODUCTS CO. 317 E. Ontario St., Chicago 11
In Canada: Vaco Lynn Products Co., Ltd. 1212 Notre Dame St. W., Montreal 3, Quebec

MORE THAN 250 TYPES AND SIZES

BREVITY—Identify by IEN - 5067 if you write the maker

Economy ELEVATING Table

For feeding sheet stock, supporting fabricated frames, handling heavy dies, or as a portable work bench. All four sides are accessible to the user.

Lifting and lowering load is hand operated. Crank handle can be attached and operated from either end, with two speed lifting. Self locking worm and screw elevating mechanism holds work at any height without danger of falling. A foot operated floor lock holds table stationery when in use.

This standard designed table has a capacity of 2,000 lbs. Special designs can be built to suit your requirements.

PRICE F.O.B. CHICAGO $310.00
Subject to current discount

ELEVATING TABLE EXTENDED

ECONOMY ENGINEERING CO.
4502 W. Lake St.,
Chicago 24, Ill.

BREVITY—Identify by IEN - 5068 if you write the maker

Lightnin Mixers
MIXCO® Engineered

Clip and save this handy SELECTION CHART of MIXERS YOU MAY NEED

FOR LIGHT LIQUIDS, dissolving materials or suspending solids (when viscosities are below 500 centipoises) . . . Lightnin SERIES C, CV and S direct drive portable mixers. 1750 RPM or variable speed. Sizes ⅛ to ¼ HP.

FOR HEAVIER DUTY OPERATION . . . Lightnin SERIES M, direct drive, 1150 RPM. Sizes 1 to 3 HP. Available for wide range of current characteristics.

FOR HEAVY LIQUIDS (500 to 4,000 centipoises) . . . Lightnin SERIES D, gear drive mixer, operates at reduced propeller speeds. Gears are completely enclosed. Sizes ¼ to 3 HP.

WHERE ELECTRIC POWER CANNOT BE USED . . . Lightnin SERIES AG (gear drive) and SERIES AR (direct drive) air driven mixers. Turbine type air motor is non-sparking, totally enclosed; cannot be overloaded or burned out. Variable speed, controlled by throttle valve. Sizes ⅛ to 1 HP.

For Complete information, GET THESE HELPFUL LIGHTNIN CATALOGS

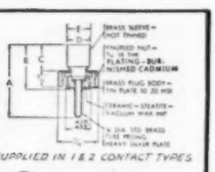
DH-50 Laboratory Mixers
B-36 Condensed Catalog—complete line
B-75 Portable Mixers
B-78 Propeller Mixers for Closed Tanks
B-76 Side Entering Mixers for Tanks up to 5 Million Gals.
B-89 Turbine and Paddle Agitators, 1 to 500 HP

MIXING EQUIPMENT CO., Inc.
(MIXCO) 124 Mt. Read Blvd., Rochester 11, N.Y.
In Canada: William & J. G. Greey, Ltd., Toronto 1

REPRESENTATIVES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 5070 if you write the maker

Ideal for ANTENNA CONNECTIONS PHOTO-CELL WORK MICROPHONE CONNECTIONS



SUPPLIED IN 1 & 2 CONTACT TYPES

JONES SHIELDED TYPE PLUGS & SOCKETS

LOW LOSS PLUGS AND SOCKETS FOR HIGH FREQUENCY CONNECTIONS

For quality construction thru-out, and fine finish, see diagram above.

101 Series furnished with 1/4", .290", 5/16", 3/8", or 1/2" ferrule for cable entrance. Knurled nut securely fastens unit together. Plugs have ceramic insulation; sockets bakelite. Assembly meets Navy specifications.

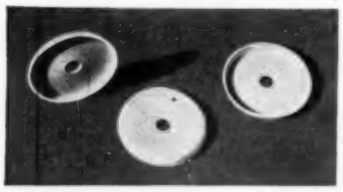
202 Series Phosphor bronze knife-switch type socket contacts engage both sides of flat plug contacts—double contact area. Plugs and sockets have molded bakelite insulation.

For full details and engineering data ask for Jones Catalog No. 17.

JONES MEANS PROVEN QUALITY

HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

BREVITY—Identify by IEN - 5071 if you write the maker



TEFLON PUMP CUPS

Here's a pump cup that can't be attacked by nor contaminate any industrial acid, alkali, solvent, oil or gas. Made of solid Teflon, these "Chemiseal" Pump Cups are absolutely chemical-proof.

Non-corrosion and non-contamination are just two advantages. In addition, Teflon is tough, somewhat resilient, extremely anti-hesive, and is serviceable from —150°F. to 550°F. (recommended for higher temperatures in some cases). Teflon retains its natural slipperiness under all operating conditions, will never adhere to any surface. Nor will it harden or undergo changes in any other critical characteristic. "Chemiseal" Teflon Pump Cups are lasting indefinitely under service conditions that destroy all other materials within hours.

Ideal for plunger-type pumps handling liquids or gas, throughout the chemical, petroleum and other process industries. Available to specifications. For more information, request Chemiseal Catalog No. 850.

We are the country's leading manufacturer of Teflon products.

Teflon Products Division
UNITED STATES GASKET COMPANY
658 N. 10TH STREET • CAMDEN, NEW JERSEY

BREVITY—Identify by IEN - 5702 if you write the maker

NOW! PRE-TIME

Manufacturing — Processing — Test Operations Automatically on Schedule from ONE MINUTE to ONE WEEK!

NEW Cincinnati "MASTER PRO"

This precision-engineered program timer provides up to six circuits for accurate timing *in advance!* Indispensable for positive control of equipment and processes. Self-regulating; develops 24 volts DC and 24 or 115 volts AC to actuate relays, switches, secondary clocks, time recorders. Rugged metal case with attractive gray wrinkle enamel finish. Operates on regular 60 cycle 115 volt AC. Write for complete specifications, or see your CINCINNATI distributor.

Cincinnati
THE CINCINNATI TIME RECORDER CO.
1733 Central Ave., Cincinnati 14, Ohio
Pioneer in Development and Manufacture of Time Control Equipment Since 1896

BREVITY—Identify by IEN - 5073 if you write the maker

CONSTRUCTION . . Power shovel, 3/4 cu. yd., has torque converter drive

Source: TRACTOMOTIVE CORP. 51 County Line Road, Deerfield, Ill.

New assembly of the company's Tracto-Loader digs into a pile of material, picks up 3/4 cu. yd. in its bucket, raises the load and dumps to a clearance height of 8 ft. above the ground, measured beneath the lowered lip of the bucket in dump position. Reach in front of the tractor in this position is 2 1/2 ft. overall.

Operation is cushioned in all of the working movements and at the same time maximum power is made smoothly available from the 40 1/2-hp. gasoline engine by the hydraulic torque converter located between the engine and the clutch-equipped transmission. Two clutches, both multiple disc design, are employed, one for forward and the other for reverse movement. Either can be selected without changing gears. The transmission provides four speeds in forward without changing gears. The transmission provides four speeds in forward and four in reverse the former between 2 and 18 mph., the latter between 3 1/2 and 28 1/2 mph.

Hydraulic equipment in connection with the bucket includes double-acting cylinders on the lift and lower movements and on the dump action. Pressure is supplied by a pump mounted on the transmission and controlled through a three-position valve. Intervals required for lifting and lowering are 7 and 5 sec. respectively. Turning radius is 11 ft. to the bucket tip.

The shovel mechanism is mounted on an Allis-Chalmers tractor. The seat and controls and steering wheel are reversed from normal position so the operator faces to the rear of the tractor and the shovel extends over the rear. Overall length of the assembly from the tractor front to the shovel lip is 13 ft., 4 inches. The wheel base measures 6 feet. Maximum height from ground to bucket top with the bucket in raised position is 12 feet. Bucket angle in dump position is 46 degrees. In maximum lowered position the bucket lip will dig to 4 in. below ground level. Overall width of the assembly over the hubs is about 74 inches. Weight is 10,650 pounds.

BREVITY—Identify by IEN - 5074 if you write the maker

ENGINE . . Accessory oil filter for company's V-type air cooled engine

Source: WISCONSIN MOTOR CORP. 1908-12 S. 53rd St., Milwaukee 14, Wis.

Rates 50 to 100 operating hours

Part No. RV-29 designates new cartridge-type oil-filter accessory now available for the company's line of V-type air-cooled four-cylinder engines through its dealers and distributors. The filter employs a combination of cotton and plastic-impregnated wood cellulose to remove solids down to micron sizes. The filter element will hold its own dry weight of acids, dirt, filings. The housing element is threaded to fit on the oil filter base on the engine crankcase, making a vibration-proof and leak-proof oil seal.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5075 if you write the maker

PRODUCTION INSURANCE against GAS CURTAILMENT

ASSURED and VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U.'s per hour.

Write for complete details on the advantages of firing with Vapofier.

VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

BREVITY—Identify by IEN - 5076 if you write the maker

FOR YOUR PANEL DIALCO
A NOVEL and UNIQUE CIRCUIT INDICATOR

DESIGNED FOR NE-51 NEON LAMP
For 110 or 220 volt circuits
The required resistor is an integral part of this assembly —"built-in."
RUGGED DEPENDABLE LOW IN COST

PATENTED: No. 2,421,321, Cat. No. 521308-997

WILL *YOU* TRY A SAMPLE?

Write on your company letterhead. We will act at once. No charge, of course.

SEND FOR THE 192 PAGE HANDBOOK OF PILOT LIGHTS

Among our thousands of Pilot Light Assemblies there is one which will fit your special conditions. Many are especially made and approved for military use. We pride ourselves on prompt deliveries—any quantity.

ASK FOR OUR APPLICATION ENGINEERING SERVICE

Foremost Manufacturer of Pilot Lights
The DIAL LIGHT COMPANY of AMERICA
900 BROADWAY, NEW YORK 3, N. Y. SPRING 7-1300

BREVITY—Identify by IEN - 5077 if you write the maker

DE-STA-CO Proves "GOOD THINGS COME IN THREES"

But rarely three as useful as these NEW De-Sta-Co Toggle Clamps. All three answer specific needs for fast clamping and positive holding pressures in production operations — welding, riveting, bonding, machining and assembly. Whatever your product, for efficient, low cost tooling, consider:

MODEL 235U, top, Retractable work-holding bar for quick, unimpeded loading and unloading of fixtures. Up to 750 lb. pressure.

MODEL 424, left; Portable Plier Clamp, a "baby" for one-hand use in cramped work areas. Deep jaw capacity altho only 4 1/2" over all.

MODEL 650, right; Plunger Clamp for heavy duty "push-pull" work-holding requirements. Compact design, develops up to 4000 lbs.

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BOAT seats and life-preserver units are put together in a fraction of time formerly required — with the Hansen Model T-2 Tacker—for Lee L. Woodward Sons Co., Furniture manufacturers, Owosso, Mich.

Tacker is more efficient. Provides neater longer-holding seat covers. Saves 6c. per seat cover over previous method.

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Better products . . . better production with Roebling Oil-Tempered Spring Wire

EVERY INCH of Roebling Oil-Tempered Spring Wire is exactly like every other inch. It's a *quality* wire, mechanically and metallurgically uniform from end to end . . . saves preparation time . . . brings fewer machine stoppages . . . minimizes the number of rejects.

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NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

AWARDS . . Trophies, plaques, medals for individual and team awards; illustrated models, descriptions, list prices, other gifts. Catalog 511, 16 pages. Williams Jewelry & Mfg. Co., 8-12 S. Wabash Ave., Chicago 3, Ill. **IEN-0470**

BORING . . Jig boring machine, 1⅝-in. drilling capacity, 9-in. boring capacity; specifications, picture examples of work. Bulletin, "Type 5", 16 pages. Hauser Machine Tool Corp., 28-32 Park Ave., Manhasset, N. Y. **IEN-0471**

BRAZING . . Salt-bath furnace for production of ferrous and non-ferrous assemblies; review on the method, data on six examples. Bulletin 124, 4 pages. Ajax Electric Co., 900 Frankford Ave., Philadelphia 23, Pa. **IEN-0472**

BRUSHES . . Power, paint and hand types; detail descriptions, notes on materials employed, recommendations on types and applications. Catalog 210, 76 pages. Osborn Mfg. Co., 5403 Hamilton Ave., Cleveland 14, Ohio **IEN-0473**

BRUSHES . . Wire brushes for power use; twelve illustrated application examples in cleaning, burring, polishing. Bulletin, "Twelve Examples", 32 pages. Pittsburgh Plate Glass Co., 3219-23 Frederick Ave., Baltimore 29, Md. **IEN-0474**

BUILDINGS . . Movable metal partitions; details on four types, specifications, construction drawings, hardware, accessories, application pictures. Catalog 51, 48 pages. Mills Co., 975 Wayside Road, Cleveland 10, Ohio **IEN-0475**

BUILDINGS . . Sectional partition of expanded metal with angle frames; standard panels, door openings, typical assemblies. Pocket Folder WC-178, 16 pages. Wheeling Corrugating Co., Wheeling Steel Bldg., Wheeling, W. Va. **IEN-0476**

CALCULATING . . Printing calculator to add, subtract, divide, multiply, all with 10 keys; operating information, examples of use. Bulletin AD-536, 12 pages. Remington Rand, 315 Fourth Ave., Room 1618, New York 10, N. Y. **IEN-0477**

CAPACITORS . . Subminiature tantalum electrolytic capacitors, 3.5 to 30 mfd.; sectional drawing, ratings, dimensions. Catalog sheet 6.531, 2 pages. Fansteel Metallurgical Corp., 2204 Sheridan Road, North Chicago, Ill. **IEN-0478**

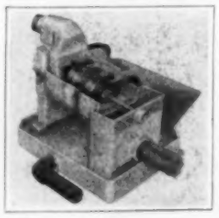
CASTINGS . . Non-ferrous centrifugal castings; general properties, list of metals handled, picture examples to show range of castings produced. Bulletin 150, 6 pages. Shenango-Penn Mold Co., 1933-37 W. 3rd St., Dover, Ohio **IEN-0479**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5082 If you write the maker

A PAID NEWS ADVERTISEMENT BY HONAN-CRANE CORP.

COOLANT FILTRATION . . . Magnets remove over 98% of all contamination



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Removal of contaminants accomplished by permanent ring magnets enclosed in revolving non-magnetic cylinder. Circular steel discs, end pieces of the cylinder acting as magnetic poles, seal off magnet cores to prevent fluid from contacting magnets. Design provides 360° constant magnetic attraction.

Turbulent flow of coolant beneath cylinder keeps metallic particles in suspension until attracted to metallic poles. Abrasive non-magnetic particles entrained with magnetized contaminants are collected by non-magnetic wiper trough, fitted to magnetic cylinder. Friction eliminated as trough does not rub on cylinder—using instead accumulation of magnetized particles to wipe mass of contamination as cylinder revolves past trough.

Unit rated at 20 GPM. Provisions in design prevent spillage when operated above rated capacity. Operates on 1/12 hp. 60 cycle 110 volt single phase motor. Requires no maintenance—provides longer tool and wheel life, better finishes, fewer rejects. Write for equipment bulletin.

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subsidiary of HOUDAILLE-HERSHEY CORP.
802 Wabash Avenue, Lebanon, Indiana

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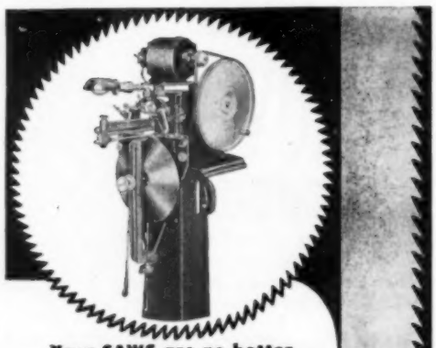

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Exclusive

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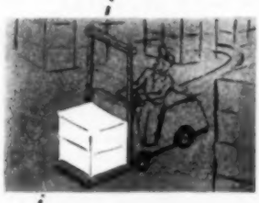

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CHEMICALS . . Specifications, properties, containers, uses for 55 types including aliphatic, aromatic, cellulose products. "Industrial Chemicals", 32 pages. Tennessee Eastman Corp., 10 E. 40th St., Rm. 4010, New York 16, N. Y. **IEN-0480**

CLEANING . . Wet-abrasive-blast machine for a variety of cleaning and product finishing uses; specifications on 7 models, application suggestions. Catalog 14-2, 4 pages. Jewett Mfg. Co., 15612-16 Hazel, East Cleveland 12, Ohio **IEN-0481**

CLEANING . . Solvent detergent materials to remove carbon, grease, dirt, paint; methods of use alone, with water or petroleum distillates. Booklet F-8143, 24 pages. Oakite Products Inc., 116-A Thames St., New York 6, N. Y. **IEN-0482**

CLEANING . . Alkaline silicate material to clean ferrous metals; properties, description of soak-tank, spray, electrolytic cleaning. Booklet S-560, 8 pages. Pennsylvania Salt Mfg. Co., 1002 Widener Bldg., Philadelphia 7, Pa. **IEN-0483**

CONNECTORS . . Electric terminals for hermetic glass-to-metal sealing; drawings and dimensional tables on three types. Catalog, "Electrical Connectors," 3 sheets. Hermaseal Co., 312-16 Riverside Drive, Elkhart, Ind. **IEN-0484**

CONTRACT WORK . . Aluminum stampings and assemblies for defense production; illustrated examples and plant facilities. "Present and Future," 52 pages. Aluminum Goods Mfg. Co., 1514-18 Washington St., Manitowoc, Wis. **IEN-0485**

CONTRACT WORK . . For metal parts such as nameplates, instrument panels, stampings, assemblies; illustrated facilities and examples of work. "Wanted", 8 pages. L. F. Grammes & Sons, 377-81 Union St., Allentown, Pa. **IEN-0486**

CONTROLS . . Magnetic amplifiers in package assembly ready to apply; data on standard push-pull units with 2 to 20 watts output. "Packaged Units", 4 pages. Magnetic Amplifiers, 11-56 44th Dr., Long Island City 1, N. Y. **IEN-0487**

CONVEYING . . Permanent-magnet assemblies to use with conveyor rolls to handle ferrous products; installation drawings, selection data, uses. Bulletin 553, 4 pages. Eriez Mfg. Co., 1303 E. 12th St., Erie, Pa. **IEN-0488**

CONVEYING . . Gravity-type wheel and roller conveyors; illustrated data on standard units, also stands, curves, switches, accessories, uses. Folder 1251, 4 pages. Metzgar Co., 417 Douglas St., N. W., Grand Rapids 4, Mich. **IEN-0489**

CONVEYING . . Power belt conveyors; condensed data on specification models for portable, floor-to-floor, assembly-line and production work. Folder B-650, 4 pages. Speedways Conveyors, 1259-63 Niagara St., Buffalo 13, N. Y. **IEN-0490**

CONVEYING . . Chain-type floor conveyors, slat, flight, belt, apron conveyors; component details and drawings, layout data. Catalog 51, letterhead request, 90 pages. Jervis B. Webb Co., 8933 Alpine Ave., Detroit 4, Mich. **IEN-0491**

COOLING . . Industrial cooling towers with stoneware-shape packing; general description, calculations and chart on a typical application. Bulletin, "Cooling Towers", 4 pages. Aqua-Therm Inc., 755 Albany St., Dayton 1, Ohio **IEN-0492**

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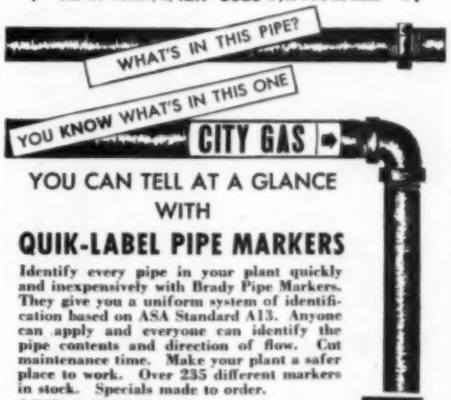

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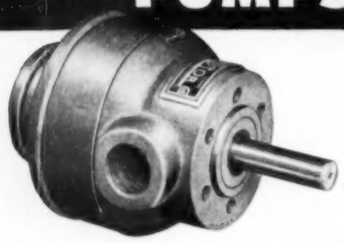

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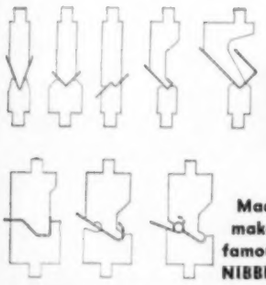

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COOLING . . Finned-tube heat exchangers for liquids; sectional view, operating description, standard designs and dimensions. Bulletin 1020, 20 pages. Griscom-Russell Co., 285 Madison Ave., 23rd Floor, New York 17, N. Y. **IEN-0493**

CUTTING . . Carbide cutting bits, blanks, tools; data and list prices on these and boring, milling tools, parts; machining suggestions, tool wear analysis. Catalog 51, 72 pages. Kennametal Inc., 100 Lloyd Ave., Latrobe, Pa. **IEN-0494**

CUTTING . . Automatic recessing tools; how-it-works description, standard units, recommended set-up procedure, grinding and setting. Bulletin 10-50, 12 pages. Scully-Jones & Co., 1936 S. Rockwell St., Chicago 8, Ill. **IEN-0495**

DRIVES . . Small permanent-magnet clutch with electric control for power output; performance curves, data on five models of 1/35 to ½ hp. "PM Clutch," 4 pages. Duncan & Bayley Inc., 783-87 Hertel Ave., Buffalo 7, N. Y. **IEN-0496**

DRIVES . . Style-QD sprockets with tapered split hubs to facilitate removal; dimensions, list prices on units for ½ to 2-in. pitch chain. Catalog 300-B-1, 8 pages. Fort Worth Steel & Machy. Co., 3602 McCart St., Ft. Worth 4, Texas **IEN-0497**

DRIVES . . Type-RC flexible shaft couplings with ¾ to 12-in. bore; design notes on divided-roller chain connection, service factors, hp. ratings. Folder 2363, 4 pages. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill. **IEN-0498**

ELECTRONIC PRODUCTS . . Tubes, test equipment, components, connectors, hardware, tools; catalog data on these and communicating equipment. Catalog 126-51, 212 pages. Allied Radio, 831-35 N. Jackson, Chicago 7, Ill. **IEN-0499**

ELECTRONIC PRODUCTS . . Special-purpose electronic tubes such as subminiature, rectifier, radiation-counter, klystron; characteristics. Bulletin DL-Q-7101, 8 pages. Raytheon Mfg. Co., 188-92 Willow St., Waltham 54, Mass. **IEN-0500**

ELECTRONIC PRODUCTS . . Fixed and variable resistors, iron cores, metallic-oxide cores, switches, small capacitors; specifications, properties. Catalog RC-8, 44 pages. Stackpole Carbon Co., 1942 Tannery St., St. Marys, Pa. **IEN-0501**

ELEVATORS . . "Portelvator" portable elevating table, 1,000 to 5,000 lb. in three models; specification table, operating description, specials. Bulletin P-50, 4 pages. Hamilton Tool Co., Hanover at Ninth St., Hamilton, Ohio **IEN-0502**

ELEVATORS . . Adjustable-level loading dock for motor-vehicle trucks; how-it-works diagram, review of features, illustrated uses. Folder, "Adjust-A-Docks," 4 pages. Rowe Methods Inc., 1741-45 E. 25th St., Cleveland 14, Ohio **IEN-0503**

ENGINES . . Diesel type, 52 to 103 hp. in three sizes; two-page color-coded cut-away view, construction high points, performance curves. Bulletin 12988, 32 pages. Caterpillar Tractor Co., 602 W. Washington, Peoria 8, Ill. **IEN-0504**

ENGINES . . Series-71 diesel engines, 2 to 24 cylinders, 32 to 780 hp.; excellent data on models, ratings, construction. Bulletin 6-SA-18, letterhead request, 36 pages. Detroit Diesel Engine Div., 13402 W. Outer Dr., Detroit 28, Mich. **IEN-0505**

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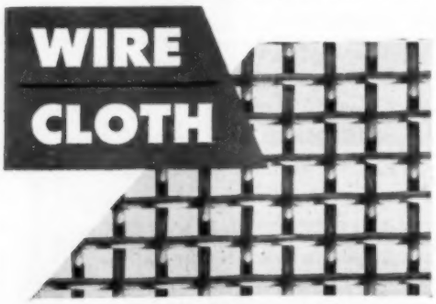
BREVITY—Identify by IEN - 5096 if you write the maker

WIRE CLOTH



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Dividers and Index Cards included.

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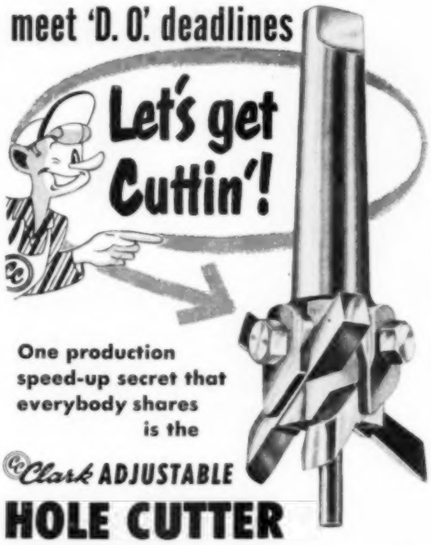


One production speed-up secret that everybody shares is the

Clark ADJUSTABLE HOLE CUTTER

Cuts *anything* cleaner, quicker, closer to tolerances. More often than not, a *single* Clark replaces a bench full of fixed radius tools, breezing through pipe, plate, plastic, fiber, transite in any thickness up to 1". Available now in seven models, adjustable from ⅛" to 5". Clark cutters cover every expansion encountered in anything from Alclad to alloys. They'll keep cutting, too, for years and years, because shanks are heat-treated, pilots hardened and ground and high speed blades can be sharpened repeatedly.

SPECIFICATIONS

MODEL NO.	SHANK SIZE	EXPANSION CAPACITY	THICKNESS CAPACITY
00	⅝" SS	⅝"—1¼"	⅛"
0	⅝" SS	⅝"—1½"	⅛"
1	½" SS	1"—2½"	¼"
2	2 MT	1½"—3"	½"
3	2 MT	2"—3½"	⅝"
4	4 MT	2½"—4"	¾"
5	4 MT	3"—5"	1"

Clark Cutter Set cuts from ⅛" to 3½", complete in case, No. CD3 kit

FOR COMPLETE INFORMATION CALL YOUR CLARK CUTTER JOBBER NOW OR WRITE DEPT. IE-5

CLARK CUTTERS
Robert H. Clark Company
9330 SANTA MONICA BLVD · BEVERLY HILLS · CALIFORNIA

BREVITY—Identify by IEN-5100 if you write the maker

The economical, sure way—to avoid ROT and TERMITE damage!

Where steam and vapor from industrial processes are prevalent wood decay is accelerated—use Wolmanized lumber to avoid costly damage.

Wolmanized* *pressure-treated* Lumber assures *lasting* protection. High pressure (150 p.s.i.) drives the preservatives deeply into the wood. Volumetric absorption of the preservative solution is measured in gallons per cubic foot—not in feet of coated surface.

Millions of feet of Wolmanized pressure-treated Lumber have been in service under severest conditions, for years. Write for facts about Wolmanized Lumber. Or, ask for copy of "Service Records" of uses in scores of industries and applications.

American Lumber & Treating Co.
1641 McCormick Bldg., Chicago 4, Ill.

*Wolmanized is a registered trademark of American Lumber & Treating Co.

Wolmanized PRESSURE TREATED Lumber
Stops Rot and Termites

BREVITY—Identify by IEN-5101 if you write the maker

THIS REVOLUTIONARY NEW

LOADING ADJUSTABLE SELF-CONTAINED RAMP

PAYS FOR ITSELF WITH A FEW WEEKS USE!

INSTALLED IN MINUTES...CUTS LOADING TIME BY HOURS!

2 STANDARD SIZES:
6' x 8'
8' x 8'
Capacity 20,000 lbs.
Other Sizes to Your Specifications

- SETS INTO, OR AT END OF, PRESENT LOADING PLATFORM.
- PLUGS INTO NEAREST 110-VOLT OUTLET.

Hydraulic finger-tip control instantly raises Ramp from level position; no further adjustment required. Deck rides with truck and *automatically* compensates for variations in bed height. Weight on truck reduced to minimum through spring counter-balancing. Here's the *time*—, *money*—, and labor-saving answer to *faster* loading that quickly pays for itself!

DISTRIBUTORS—Some Territories Still Open!

GREEN-PENNY CO.
425 E. Washington Blvd. • Los Angeles 15, Calif.

BREVITY—Identify by IEN-5102 if you write the maker

CROWN FACED SOLID STEEL PULLEYS

PRECISION MACHINED
COMPLETE WITH SHAFTS
NOW AT NEW LOW PRICES!

These pulleys are "born of necessity". Making quality conveyors, we didn't like the performance of the common welded steel pulley. The light gauge construction, bending and denting of the edges, and the eccentricity and unbalance after the shaft was inserted, just wouldn't do. The result is the development of standardized solid steel, precision machined, crown faced pulleys, complete with shaft at astonishing low prices. Why not try them on your equipment.

AVAILABLE FROM STOCK!

These pulleys are machined from ¼" wall steel tubing after the shafts have been assembled, thus producing a strong and true running pulley. Best of all, they re low-priced!

FREE! MAIL FOR DATA SHEET AND PRICES

ISLAND EQUIPMENT CORP. IE-5
27-01 Bridge Plaza North
Long Island City 1, N. Y.
Please send Bulletin CP-1 on Crown Faced Solid Steel Pulleys.
NAME
ADDRESS
CITY STATE

BREVITY—Identify by IEN-5103 if you write the maker

GAGE . . Steel shrink rule adds 11/32 and 13/32 inch per foot

Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

No. 366 and No. 367 are two new steel shrink rules available in 12 and 24-in. lengths to compensate for shrinkages of $^{11}/_{32}$ in. and $^{13}/_{32}$ in. per ft. in either of two lengths. The rules are made of tempered steel, are ground and machine divided to read 8ths, 16ths, 32nds, and 64ths, in the two shrinkage ranges. The 12-in. rule is 1 in. in width. The 24-in. unit measures 1¼ inches. Both are additions to a line available with shrinkages from $^1/_{12}$ to $^7/_{12}$ in. per foot and equivalent metric graduations for the same purpose.

BREVITY—Identify by IEN-5104 if you write the maker

TRUCK . . Box type dump unit for general utility use in a plant

Source: AMERICAN CONVEYOR CO.
1113-17 W. Adams St., Chicago 7, Ill.

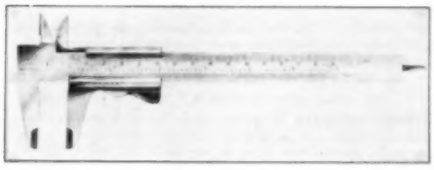
Speed-Barrow is a new three-wheel box-type truck with a latch-held hinge door in the front face. The operator steps on a trip bar to disengage the latch and tips the unit forward a little to dump a load.

The body is made of steel and measures 21 in. in width by 42 in. in length at the top. Depth is 36 in. and load capacity is 12 cu. ft. or 1,800 pounds. The load wheels have pneumatic tires. A swivel caster wheel is at the rear.

BREVITY—Identify by IEN-5105 if you write the maker

GAGE . . Vernier caliper with 6 in. English and Metric scales

Source: TRANSOCEAN TRADING CO.
1509-13 N. Gardner St., Dept. IE, Los Angeles 46, Calif.



Readings can be made to .001 in. and to .1 mm. for inside, outside and depth measurement with this new vernier caliper. It is imported from Germany and is a precision instrument with surfaces hardened and lapped and with the scale engraved. List price is $14.75 in tool steel, $16.25 in stainless.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-5106 if you write the maker

You save costly man-hours when you use Penetone's SAFE liquid degreaser, NAVEE '42. This non-explosive, non-toxic chemical *melts* away the toughest deposits in a few minutes.

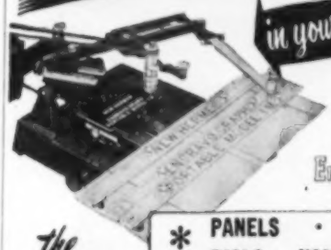
Use NAVEE '42 to dissolve hardened fuel oil, diesel oil, asphalt, preservative greases, carbon stains and other hard-to-budge accumulations. Spray it on, brush it on, or use it in a tank without fear of overpowering fumes.

NAVEE '42 is a stock item at some of the country's largest industrial plants, airlines, shipping lines, and at scores of Army, Navy, Marine, and Coast Guard bases. Write today and we'll tell you how this amazing chemical can save you man-hours and smooth production.

THE PENETONE CO.
BOX IEN 551 • TENAFLY, N. J.

BREVITY—Identify by IEN-5107 if you write the maker

SAVE TIME! do your engraving* in your OWN SHOP



WITH THE TRACER GUIDED Engravo

* PANELS • TOOLS
DIALS • NAMEPLATES

the Only PORTABLE ENGRAVER WITH THESE FEATURES

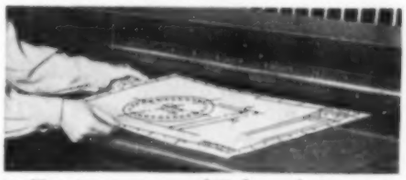
- Engraves 15 sizes from ONE alphabet
- Covers a LARGER area than any other portable
- Equipped with self-centering holding vise
- **Convertible into TRACER GUIDED ELECTRIC ETCHER for identifying tools and dies**

PORTABLE ENGRAVER described in Folder IM-23 — HEAVY DUTY ENGRAVER described in Folder H-23

new hermes, inc.
13-19 UNIVERSITY PLACE • NEW YORK 3, N. Y.
The world's largest manufacturer of portable engraving machines

BREVITY—Identify by IEN-5108 if you write the maker

Announcing Kodagraph Autopositive Paper *Translucent*



● Here is a new type of Kodagraph Autopositive Paper that can speed up your print-making and drafting.

Kodagraph Autopositive Paper, Translucent, like "regular" Autopositive, gives you positive photographic intermediates directly. You, or your local blueprinter, can process it in the same simple manner—with existing print-making equipment . . . and standard photographic processing.

Its entirely new base, however, is tougher . . . and 30% more translucent, enabling you to produce blueprints and direct-process prints at faster speeds—which lowers production costs in large volume work. And this extra translucency makes practical and convenient the general use of "reverse-reading" intermediates (which assure final prints of top quality).

No problem for the draftsman here. He can read through, and work on, the back of this remarkably translucent paper. Changes are also easier to make because the dense photographic black lines of the print can be removed in seconds with any eraser.

The extra durability of "Autopositive Translucent" simplifies the handling of larger-size sheets . . . offers increased resistance to wear and tear in print-making and drafting.

Write today for illustrated folder giving full details.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

BREVITY—Identify by IEN-5110 if you write the maker

Abart GEARMOTORS

Here's an easy way to gear down speeds on equipment for pilot operations and development work — on agitators, conveyors, pumps, and other applications. You'll find Abart Gearmotors a big help to you. You get the *right* and dependable reduction at the right power. You get *better* operation, you save space by eliminating pulleys, couplings, belts, chains. Output speeds as low as 17½ R.P.M., 1/6 to 5 H.P., ratios 5⁴/s-1 to 100-1.

ABART GEAR & MACHINE CO.
4633 WEST 16th STREET, CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers

Write for BULLETIN B250

BREVITY—Identify by IEN-5111 if you write the maker

HEAT When and Where You Want It

WATLOW CARTRIDGE UNITS

For a highly concentrated, self-contained mass of heat

APPLICATION—For heating metal parts by insertion into drilled and reamed holes. Sealed ends available, permit use for immersion purposes.

CONSTRUCTION—Nickel chromium resistor is wound on refractory core and embedded in high heat conductivity cement. Brass, steel, monel, or stainless steel sheaths.

TERMINALS—Rigid (several styles and sizes) or flexible (special lugs if desired).

RATINGS—Densities 10-35 watts per sq. in.

WRITE for Watlow Electric Heating Units Catalog.

SPECIALISTS IN ELECTRIC HEATING UNITS

WATLOW
ELECTRIC MANUFACTURING COMPANY
1318 N. 23d St. St. Louis 6, Mo.

BREVITY—Identify by IEN-5112 if you write the maker

WHEN ACCURACY COUNTS...

Contact SCHERR!

ULTRA-CHEX PRECISION GAGE BLOCKS

WITH 5 MILLIONTHS ACCURACY • AVAILABLE IN LARGE AND SMALL SETS •

9 BLOCK SET ILLUSTRATED MAKES 330 COMBINATIONS FOR MICROMETER ADJUSTMENT UP TO 4" WITH OPTICAL FLAT..... $ 25.

34 BLOCK SET GIVING 80000 COMBINATIONS IN TENTHS UP TO 8"..... $ 98.50

★ A Necessity in Every Workshop...
★ A Vital Aid to Every Toolmaker...

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., Inc.
Complete Line of Precision Instruments
198-C LAFAYETTE ST. • NEW YORK 12, N. Y.

NEW LITERATURE—Continued

"Note the special 'O' numbers"

EXTINGUISHING . . Dry-chemical fire-extinguishing units; models and their specifications, operation and recharging instructions. Bulletin F-5037, 20 pages. Ansul Chemical Co., foot of Stanton St., Marinette, Wis. **IEN-0506**

FASTENINGS . . Nails, rivets, screws and others made by cold heading; illustrated types and variations, special treatments, metals, packaging. Catalog 60, 36 pages. John Hassall Inc., Oakland & Clay Sts., Brooklyn 22, N. Y. **IEN-0507**

FEEDING . . Model-M "Chem-O-Shot" chemical feed pump for bottle and can-washing equipment, similar units; installation drawing, construction. Bulletin SAN-10, 4 pages. Proportioneers Inc., 384 Harris, Providence 9, R. I. **IEN-0508**

FILTERING . . "Staynew" pipe-line filters for air and other gases; operating principle and drawings, cut-away views, specifications on 75 units. Bulletin B-1A, 8 pages. Dollinger Corp., 9-13 Centre Park, Rochester 3, N. Y. **IEN-0509**

FILTERING . . Vertical-leaf pressure filters for acid or alkaline solutions; flow-travel diagram, standard models, specifications. Bulletin 100-EP, 8 pages. Industrial Filter & Pump Mfg. Co., 5902 Ogden Ave., Chicago 50, Ill. **IEN-0510**

FIRST AID . . "Pneolator" unit for automatic artificial respiration based on a 21 cu. ft. oxygen cylinder; operating description, equipment. Bulletin CH-2, 4 pages. Mine Safety Appliances Co., 21 Braddock Ave., Pittsburgh 8, Pa. **IEN-0511**

FLOORS . . "Flintz" resurfacing material for industrial floors of concrete, brick, stone, asphalt; properties, application instructions. "Keep 'Em Rolling", 4 pages. Dura-Tred Co., 355 Central Park Blvd., Chicago 24, Ill. **IEN-0512**

GAGES . . Pressure, vacuum, altitude and compound gages; models, ranges, construction, specials. Catalog 300, 12 pages. Gotham Instrument Div., American Machine & Metals, 149 Wooster St., 4th Flr., New York 12, N. Y. **IEN-0513**

GRINDING . . Machines to sharpen cutting blades, knives for wood-working machinery; description on standard units, attachments, balancing ways. Bulletin C-10, 4 pages. Dependable Machine Co., Box 839-A, Greensboro, N. C. **IEN-0514**

HEAT TREATING . . Quenching oil for service in a 300 to 450-deg. F. range as in martempering; physical properties, examples. "Mar-Temp Oil," 4 pages. E. F. Houghton & Co., 301-5 W. Lehigh Ave., Philadelphia 33, Pa. **IEN-0515**

HEATING . . "Fintube" heat-exchanger tube with welded longitudinal fins; materials, sizes, application pictures, area tables, heat-transfer curves. Bulletin 511, 8 pages. Brown Fintube Co., 148-52 Huron St., Elyria, Ohio **IEN-0516**

HOSE FITTINGS . . Quick-connecting and shut-off hose couplings, hose clamps, connectors; sectional views, operation, sizes, installation. Catalog, 40 pages. Hansen Mfg. Co., 4029-33 W. 150th St., Cleveland 11, Ohio **IEN-0517**

INSULATING . . Molded thermal insulation in 85-per-cent magnesia and Prasco 1,500-deg. types; forms, properties, use recommendations, tables. Bulletin 6030, 52 pages. Pabco Products Inc., 471 Brannan St., San Francisco 19, Calif. **IEN-0518**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-5113 if you write the maker

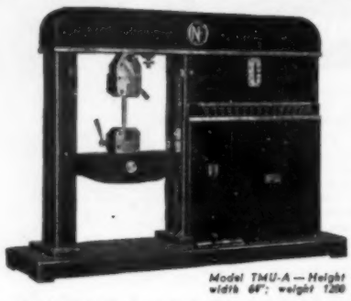
Make it *easy* for your workers to move materials—and you take a big step toward lower handling costs. That's one of the reasons why it pays to use boxes, cans and other receptacles made from *Diamond Fibre*. This durable material weighs only ½ as much as aluminum—yet is plenty strong for long, hard use! It will not readily crack, splinter, or shatter. Its smooth, tough finish makes it safe for handling anything from fine fabrics—to steel products. For faster, *easier* materials handling, write for Catalog R-50, today.

C-D DIAMOND FIBRE RECEPTACLES
CONTINENTAL-DIAMOND FIBRE CO. NEWARK 21, DEL.

BREVITY—Identify by IEN-5114 if you write the maker

It Will Pay You to Make Your Own Tests with

NATIONAL FORGE UNIVERSAL TESTING UNITS



Model TMU-A — Height 64"; width 66"; weight 1200 lbs.

The National Forge Universal Testing Machine, Model TMU, is compact, accurate, dependable, easy to operate and moderately-priced.

Wide working clearances, long stroke, quick-action simplified variable-speed control, improved grips and a wide spread of load scale ranges adapt this modern, streamlined unit to production, research or school instruction tests of a great variety of materials and specimen sizes. A.S.T.M. accuracy requirements are guaranteed.

Three load scale ranges: Model TMU-A — 0-30,000, 0-6000, 0-600 lbs. Model TMU-B—0-15,000, 0-3000, 0-300 pounds.

PROMPT DELIVERIES OF FEW UNITS REMAINING IN STOCK.

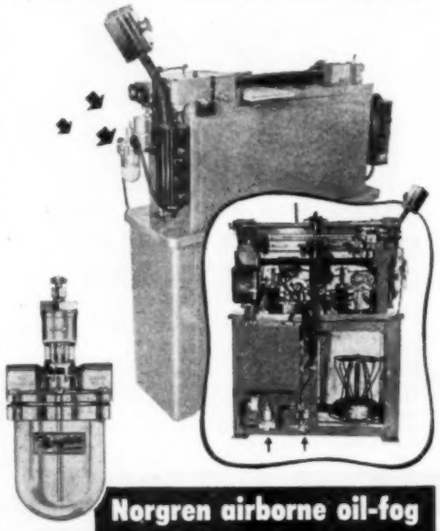
For details, write for Brochure 501.

TESTING MACHINE DIVISION
NATIONAL FORGE & ORDNANCE COMPANY
Dept. EN Irvine, Warren County, Penna.

BREVITY—Identify by IEN-5115 if you write the maker

Norgren OIL-FOG LUBRICATION

EXTENDS DIE LIFE MANY TIMES



Norgren airborne oil-fog CLEANS AND COOLS the die as it lubricates!

Spiral binder SB-6, made by Spiral Binding Company, New York, coils galvanized wire thru carbide dies at linear speed of 3,500 inches per minute. It incorporates a Norgren Lubricator that injects an airborne OIL-FOG thru the dies with amazing results: **Die life is extended many times . . . Flaking is reduced to a minimum . . . Air flow maintains safe die temperature, and cleans the die of flakes and other foreign matter.**

The machine also employs a Norgren Regulator-Lubricator Unit to serve two air cylinders. Result: *"Top performance of our machine at negligible maintenance over millions of cycles of operation."*

For full details write for
APPLICATION DATA SHEET No. 106
C. A. Norgren Co., 232 Santa Fe Drive
Denver 9, Colorado

25th Year of Progress

Norgren
LUBRICATORS, REGULATORS, FILTERS, VALVES, HOSE ASSEMBLIES

BREVITY—Identify by IEN - 5117 if you write the maker

FAST — EASY PERMANENT WIPE-ONS for STAMPINGS, ENGRAVINGS, LETTERING, DESIGNS, SYMBOLS.

Lacquer-Stik

Just RUB IN . . . WIPE OFF . . . FINISHED!

- No Mess, No Waste, No Brush.
- Expands and contracts with parts.
- Withstands temperatures to 500° F.
- Does not smear when handled.
- Saves Time, Labor, Materials.

For Metals, Plastic, Ceramics, Wood and all smooth surfaces.

Lacquer-Stik is a highly specialized paint, compound and prepared solely for use as a wipe on. It is semi-solidified in stik form for quick, convenient use, but soon hardens and becomes permanent.

Our Research Laboratories will study your problem and make recommendations on any parts you submit without obligation.

Samples and Literature Upon Request

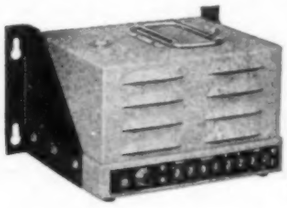
LAKE CHEMICAL CO., 3060 West Carroll Ave., Chicago 12, Ill.

BREVITY—Identify by IEN - 5118 if you write the maker

New... WESTON

Inductronic* D-C AMPLIFIER

with Sensitivity and Stability



Model 1411 D-C Amplifier

*Trade Mark

- *Stable* D-C Amplifier
- Employs new Induction Galvanometer
- High degree of resolution even at fractional loads
- Potentiometric input balance
- Reaches steady, full-scale deflection in fraction of a second
- Plug-in range standards interchangeable, for either microamperes or millivolts
- Uses standard tube components
- Descriptive bulletin available

High Sensitivity **DOUBLE-PIVOTED** Instruments

Model 622—for precise measurements of potential and current at very low energy levels. Require no leveling, accuracy within ½ of 1%. Electrostatically and magnetically shielded. Long readable mirrored scales, knife-edged pointers. Available in single and multi-range D-C microammeters, milliammeters, millivoltmeters and voltmeters; and milliammeters and voltmeters in thermo and rectifier types for R-F and A-C. Write for literature.

WESTON *Instruments*

WESTON ELECTRICAL INSTRUMENT CORPORATION
603 Frelinghuysen Avenue, Newark 5, New Jersey

BREVITY—Identify by IEN - 5120 if you write the maker

DRIVE . . Tachometer attachment applies on company's variable drive

Source: REEVES PULLEY CO.
800 N. Wilson St., Columbus, Ind.

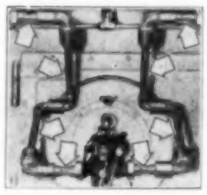
New tachometer is now available for application on the company's variable-speed transmission or Vari-Speed Moto-Drive. It connects direct when the low speed of the variable shaft is greater than 100 rpm. and the high speed of that same shaft is greater than 750 rpm. In other instances it is connected by suitable gearing to meet given conditions.

The assembly consists of an ac. generator mounted on the transmission or the drive, 10 ft. of two-conductor cable and the electric indicating instrument. It essentially is an ac. voltmeter calibrated in rpm. or in other functions of speed or time as required. Two or more of the indicators can be connected to the same generator when they have been suitably adjusted by the company. The indicator can be mounted at distances to 300 ft. from the generator without affecting accuracy of the speed readings.

BREVITY—Identify by IEN - 5121 if you write the maker

PIPE FITTINGS . . Swivel joints and connectors for equipment assembly

Source: RASMUSSEN MFG. CO.
12351 Industrial Ave., Hollydale, Calif.



New connectors in the form of pipe sections have been added to the company's ball-bearing swivel joint, previously described IEN-4224-50, for assembly of multiple-swivel connections in flexible mountings as in the oil burner shown in the illustration. Line sizes are ½, ¾ and 1 inch. An assembly made up of four swivels, two long connectors and two short ones will measure 32 in. in overall length in the ½-in. size or 42 in. in the 1-in. size. Short dimensions between the openings as they face in opposite directions at the end measure 12 inches. Other lengths are available to specification. Each of the swivel joints rotates 360 deg. and is available with suitable packing and for pressure to 1,000 lb. and temperature to 750 deg. F.

BREVITY—Identify by IEN - 5122 if you write the maker

TRUCKS . . New equipment features reviewed in issue of company's house publication

Clark Equipment Co.
Battle Creek 49, Mich.

"Material Handling News" current issue, presents details on new developments in the company's line of power lift trucks. These include the "Dynatork" magnetic coupling, the new Electro-Lift and Hydro-Lift operator-walk trucks and the Pul-Pac attachments. Please use your letterhead.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5123 if you write the maker

3-LB. ROTOR SCALER CLEANS WELDS FASTER

"PAID OFF" IN 25 DAYS

A FABRICATING shop reports the new Rotor S-1 Scaler cleans more welds per day because it is lighter, shorter, easier to get into hard-to-reach places. Savings paid off cost in 25 days. Weighs only 3 pounds; is 10 inches long. Safety retainer chisel allows long reach into corners—you don't have to hold chisel. For peening, rust and scale removal, star drilling, light chipping. Ask for Bul. 33.

THE ROTOR TOOL CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 5124 if you write the maker

SYNTRON

PARTS FEEDERS

Feed Parts

Feeding Rubber Stoppers at 180°

1. Automatically
2. Single File
3. At Variable Rates
4. In Oriented Position

Without damage feed parts . . . small, medium or large . . . wood, metal, fibre, glass or plastic . . . of various shapes. . . . to grinders and presses, inspection and packaging devices, and other automatic processing equipment.

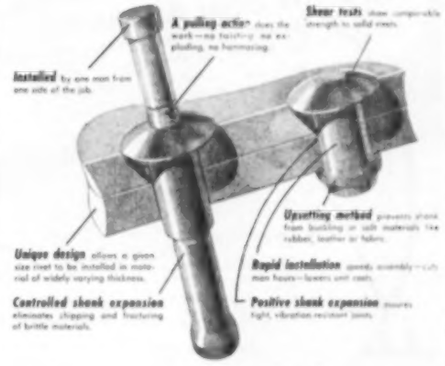
Extremely compact, these units operate by controlled electromagnetic vibration—no motors, gears, belts or other wearing parts to require expensive maintenance.

Catalog data upon request. Or send details of your problem along with sample parts to . . .

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 5125 if you write the maker

Here's why **CHERRY RIVETS** *make the hard jobs easy*



Cherry Rivet
COMPANY
A Division of Townsend Company
231 WINSTON STREET, LOS ANGELES 13, CALIFORNIA

BREVITY—Identify by IEN - 5126 if you write the maker

Solve your Extrusion Problems

with "HAYNES" Alloy Dies
Trade-Mark

HAYNES alloys are the standard die material for extruding such highly abrasive matter as manganese dioxide and carbon for battery mix. They have also been the only die material that could stand the corrosive attack during hot extrusion of vinyl-chloride plastics.

Some of the HAYNES alloys have Rockwell C hardness as high as 62 and exceptionally low frictional coefficients. Among various special properties, other HAYNES alloys have especially good resistance to acids and salts—even at high temperatures.

For further information about HAYNES alloy dies, write to our general offices in Kokomo, Indiana.

Haynes Stellite Company
A Division of Union Carbide and Carbon Corporation
UCC
General Offices and Plant: Kokomo, Indiana

"Haynes" is a trade-mark of Union Carbide and Carbon Corporation.

BREVITY—Identify by IEN - 5127 if you write the maker

Cool Running...LONG LIVED

SUPER-7 V-belts give long, satisfactory service even under conditions of load, shock and grit. Tough, double-wrapped cover is bias cut and impregnated with rubber for strength and elasticity. It seals out dust, grit, moisture; takes the wear; keeps the belt in shape; and protects cord structure.

But you get more than good belts when you standardize on *Super-7* V-belts. You also get the benefit of the greatest V-belt experience in the world both in the field and factory. Your nearby Allis-Chalmers Authorized Dealer or Sales Office can serve all your V-belt drive needs, whether they are new or replacement V-belts; standard and variable speed sheaves; or speed changers.

Get your copy of the revised 124 page *Texrope* Pre-Engineered Drive Manual from your A-C Dealer or Sales Office or write for Booklet 20B6956A. Allis-Chalmers, Milwaukee 1, Wisconsin. A-3313

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FOR BETTER LIGHT ON THE JOB

Directs Light Exactly Where Needed as Easily as Pointing Your Finger

Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches

MODEL 3470-P-172

Overall length 48¼". Three instantly adjustable joints. Circular base for machine or wood screw mounting.

$7.16 EACH in pkg. of 6 Single Units $8.95 ea.

- **Rugged Construction** to stand strains and shocks.
- **Instantly Adjustable** with full swivel ball and socket joints.
- **Infra-red Baked Enamel Finish** — Exterior, Wrinkled Gray — Reflector Interior, high temperature White.
- **Reflector** accommodates 100 watt A-21 medium screw base lamp.
- **Wired Complete** with switch socket and 8 ft. oil resistant cord.

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Positive Seal DISK FILTER

1. FILTERING ELEMENTS are independently tightened to provide positive seal.
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★ This multi-purpose filter will operate with a lesser number of sheets than its rated capacity if so desired. Unit is arranged to make reloading and cleaning as easy as possible. Rigidly constructed inlet and outlet rings insure a positive seal and thus eliminate the danger of bypassing unfiltered liquid. Fully illustrated in bulletin ECD-1 which gives complete specifications.

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NEW LITERATURE—Continued

"Designations to help check your file"

LATHE ATTACHMENTS . . "Lathe Converter" for milling, boring, drilling, grinding operations; description of basic unit, operation, setups. Catalog 450, 20 pages. Master Mfg. Co., 1302 East Ave. A, Hutchinson, Kans. **IEN-0519**

LATHE TOOLS . . Combination turning tools to cut, drill, ream, face; specifications on these and holder for taps, dies, cut-off blades, specials. Catalog, 28 pages. R & L Tools, 1823-27 W. Bristol St., Philadelphia 40, Pa. **IEN-0520**

LUBRICATING . . Caps and tubes for bearing lubrication by oil; drawings and data on split rubberlike and lid-type standard units, specials. Catalog B-3, 12 pages. Eynon-Dakin Co., 1845-49 W. Bethune Ave., Detroit 6, Mich. **IEN-0521**

LUBRICATING . . "Suniso" oils for use in sealed refrigerant compressors; properties and performance reports on a line. Pocket booklet, "Refrigeration Oils", 8 pages. Sun Oil Co., 1606-10 Walnut St., Philadelphia 3, Pa. **IEN-0522**

MARKING . . "Metal-Cal" aluminum-foil decal nameplates, diagram or instruction signs; description, test report data, application instructions. Pocket folder, 6 pages. C & H Supply Co., Boeing Field, Dept. 10, Seattle, Wash. **IEN-0523**

METAL PARTS . . Circular rolled and welded steel products; examples of rings, bands, gear blanks, motor frames, spools, wheel rims. Bulletin W-500, 8 pages. Cleveland Welding Co., Berea Road & 117th St., Cleveland 7, Ohio **IEN-0524**

METAL PARTS . . Flat steel parts such as scraper blades, valve discs, knives, made to specification; picture examples, scope. "Custom Steel Parts", 20 pages. Henry Disston & Sons Inc., 49 Tacony St., Philadelphia 35, Pa. **IEN-0525**

METAL SPRAYING . . Guns and equipment assemblies; general description of the process and its possibilities, specifications, uses. Bulletin, "Mogul", 20 pages. Metallizing Co. of America, 3518-22 W. Carroll Ave., Chicago 24, Ill. **IEN-0526**

MILLING . . Universal spiral milling attachment; general description, illustrated set-ups, table of specifications. Bulletin M-1718, 4 pages. Cincinnati Milling & Grinding Machines Inc., Marburg & Kline Sts., Cincinnati 9, Ohio **IEN-0527**

MOTORS . . Variable-speed units, 1 to 500 hp.; details on three-phase rotor-fed shunt commutator design, performance curves. Bulletin 245-3051, 16 pages. Brown Boveri Corp., 19 Rector St., Room 1215, New York 6, N. Y. **IEN-0528**

MOTORS . . "All-Weather" electric motors, 1 to 50 hp.; illustrated details on corrosion proofing, bearings, insulation, available motor types. Bulletin 400, 6 pages. Robbins & Myers Inc., 1343-47 Lagonda Ave., Springfield 99, Ohio **IEN-0529**

MOTORS . . Series-600 dc. mill motor and magnetic control equipment; construction details, internal views, drawings. Booklet B-4730, 16 pages. Westinghouse Electric, 511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa. **IEN-0530**

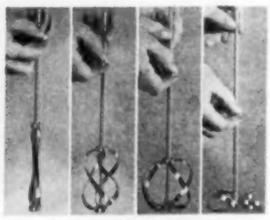
NAMEPLATES . . Etched and lithographed metal nameplates, dials, scales, rules, panels; picture examples in color to show products made. Bulletin, 8 pages. General Etching & Mfg. Co., 3078-80 W. Grand Ave., Chicago 22, Ill. **IEN-0531**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5130 if you write the maker

A PAID NEWS ADVERTISEMENT BY FISHER SCIENTIFIC CO.

MIXING . . "Umbrella" stirrer enters flask neck, opens when inside



Four of the many shapes into which the blades can be adjusted

Four flexible stainless steel blades can be collapsed to enter through a flask neck and then opened out and bowed or twisted to form a variety of configurations. When twisted they produce a disintegrating shear action for quick mixing of solid materials in a solution.

The central 1¼-in. stainless-steel shaft inserts into the chuck of a Fisher Fultork Labmotor, the Variable Speed Stirring Apparatus or similar equipment.

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. . . Rely On **Bendix-Friez**

With the Bendix-Friez portable humidity and temperature recorder, 10 or 30 hour records may be kept on convenient 3" x 5" charts. Compact design and superior precision make this handy instrument ideal for taking on-the-spot recordings covering any productive process or plant condition. For more detailed information write to:

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universal tables

THE CINCINNATI GILBERT MACHINE TOOL COMPANY

save up to 50% of set up time on radials, boring mills

Just one setup enables you to drill at any angle up to 90° on five sides of a cube. But that's only half the story! Cincinnati Gilbert Tables provide four-point support of the work when in the lowered position, without strain on the worm. Thus you get the greatest possible rigidity of the work, greater assurance of accuracy, better ease of operation.

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2 NEW Sizes! HOFFCO-VAC Heavy-Duty, Portable VACUUM CLEANERS

Bigger Capacity and Higher Vacuum for Cleaning Larger Areas of Walls, Floors and Overhead Surfaces at Lower Cost!

Hoffco-Vac 15 Operates 35-foot length of hose.

Hoffco-Vac 30 Operates 50-foot length of hose.

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Canadian Plant: Canadian Hoffman, Newmarket, Ont.

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but it's used to make a woolen suit

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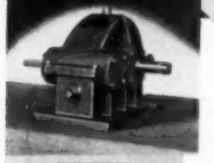
ON-THE-SPOT ENGINEERING SERVICE

Unsurpassed in the speed reducer industry



Helical Gear

Fat. Differential Gear

Worm-Helical Gear

Worm Gear

The fact that Winsmith has today the most complete, fully standardized line of speed reducers (from fractional to 85 hp), never for a moment diminishes the highly personalized, power transmission engineering service which it has always stressed.

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Springville (Erie County) N. Y.

Winsmith Story in Small Folder
Merely request "Save through Standardization" on a penny postal.

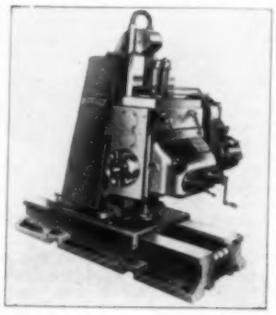
50th Anniversary

WINSMITH SPEED REDUCERS

BREVITY—Identify by IEN - 5137 if you write the maker

BORING . . Horizontal machine for fixed installation or portable use

Source: FORNEY'S INC.
203 Elm St., New Castle, Pa.



The spindle head in this new machine is mounted on horizontal ways on a carriage that rides on a vertical column. The column is movable on a base designed to anchor to floor plates or to mount on a suitable surface on or adjacent to large work that can not be moved readily. The machine is adjustable through 36 in. on its base. It feeds by hand or by power at four rates between .010 and .063 in. through a 19-in. movement in line with the spindle. It is adjustable vertically through 24 in. from a center distance of 23 in. between the spindle and the bottom of the base.

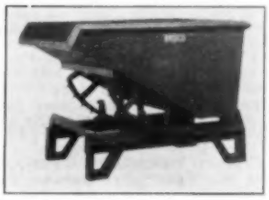
The spindle measures 5 in. in diameter at its head. It is fitted with a standard ASA. No. 50 milling-machine spindle nose and carries a through hole to clear a 1-in. draw-in bolt that may be required to hold a tool adapter or milling cutter in place. The spindle is motor driven in connection with a combination clutch and brake and an 8-speed transmission for rotation at 5 to 103 rpm. Rotating shafts are mounted on anti-friction bearings. Lubrication is by a pressure pump for cascade and gravity flow of oil from a reservoir in the head. The assembly weighs about 10,000 pounds.

Standard drive is by a 5-hp. belt-connected motor for operation on 220-volt 3-phase 60-cycle ac. The machine can be picked up by a crane for movement from one location to another. It is available with various accessories, including a face plate that mounts on the spindle for facing operations with continuous feed to 33 in. in diameter.

BREVITY—Identify by IEN - 5138 if you write the maker

HANDLING . . Self-dumping hopper applies on truck, ½ to 2 yards

Source: BRUMMELER STEEL PRODUCTS CO.
1413-17 Ionia Ave. S. W., Grand Rapids 7, Mich.

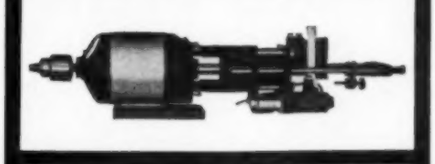


List price is $110 to $300 for this new welded-steel skid-mounted hopper in a range of sizes between 26 by 44 by 24 in. to 51 by 72 by 39 inches. The unit is made of 3/16-in. steel plate with the angle-iron skid formed and welded. The hopper rides on runners that are tooth equipped to engage holes in the skid for positive tracking. It is balanced so it will dump of its own accord after having been loaded when a catch is released at the rear end. Upon emptying, it will return to carrying position to latch in place again.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 5139 if you write the maker

New BLACK SELF-CONTAINED DRILLING UNITS



NO SPLINES — Self-contained units, at low cost, for drilling, tapping, chamfering, reaming and similar operations.

NO GEARS — New principle employs traversing motor shaft for work spindle, applies even torque with practically no end play. Drill has air feed for rapid advance to work—hydraulic control to completion of work cycle with uniform feed. Tapping unit controlled so tap follows its own lead without chamfering first thread or stripping threads on return stroke. Easy adjustment—depth accuracy to within .001".

NO CAMS

NO CLUTCHES

NO REVOLVING WEIGHTS — Operate in any position. Wide range of speeds and sizes.

Write for complete information

THE BLACK DRILL COMPANY
1378 EAST 222nd STREET CLEVELAND 17, OHIO

BREVITY—Identify by IEN - 5140 if you write the maker

KLIXON Thermo Snap Temperature Controls

Positive snap action . . . for military and civilian applications

Klixon Thermo-Snap Controls . . . hermetically sealed and open types . . . give accurate temperature control. Actuated by the simple, snap-acting "Spencer Disc," their snap-action opens the circuit with a *quick, clean break* . . . closes the circuit to a *solid make*. Their accurate operation is best able to withstand shock, vibration, altitude or motion.

Klixon Thermo-Snap Controls are used in many military and commercial applications including use as — low limit and high limit controls, fuel delay switches, purge switches, temperature controls, fan switches, tube and rectifier cooling control, etc.

They are available in many types and ratings including completely hermetically sealed units. Write for information today.

KLIXON

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Division of Metals & Controls Corp.
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Complete information on improved centrifugal Spray Dryer, illustrated with photographs and engineering design drawings.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

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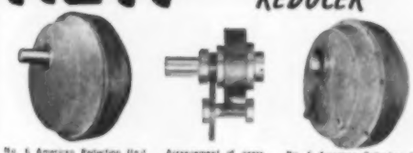
NEW 40 H.P. SHAFT-MOUNTED REDUCER



No. 6 American Reduction Unit showing input shaft for mounting of the driven sheave in primary V-belt drive. By changing the rotor of the V-belt drive, you can get any speed below 110 R.P.M.

Arrangement of gears and bearings in No. 6 American Reduction Unit.

No. 6 American Reduction Unit showing output hub for easy mounting on the shaft of the driven machine by means of a split tapered bushing.

Rugged No. 6 American Reduction Unit Extends to 40 H.P. the Advantages of Shaft-Mounted Reduction Drives

- High-Capacity, Anti-Friction Bearings assure long, efficient service.
- Heavy Internal-Ribbed Housing assures permanent gear and bearing alignment.
- Forged, Heat-Treated, Alloy-Steel Helical Gears provide ample capacity and quiet operation. Meet A. G. M. A. standards.
- Exclusive Oil-Seal Design and Location Above Oil Level prevents oil leakage.
- Ample Housing Size prevents overheating.

Clip and mail the coupon below for complete information on this new reduction unit and the entire line of American Reduction Drives.

Standard units for drives from one to 40 H.P. are available from stock.

AMERICAN The Original Shaft-Mounted REDUCTION DRIVES

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At no obligation, send me complete information on American Reduction Drives.
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IDEAL METAL CUTTING SAW FOR YOUR SHOP!

Kalamazoo BAND SAW

A veritable workhorse in any shop. Cuts bars, angles, tubes, pipe, and rounds with no burr, minimum kerf. Works fast, smooth, and accurately. Uses standard 1/3 HP 110/60/1 motor. Completely portable. Write for details on this low cost metal cutting saw.

Model 610-S. Capacity 4" round, 6" x 10" flat. Coolant equipment available.

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. . . with built-in blower

RCS SUPER SAW AIR COOLED

A Journeyman's Tool, built to stand up under constant, on-the-job Contractor or industrial use . . .

Cutting opening in oak flooring in less than 2 minutes—no starting hole needed!

● NO STARTING HOLE NEEDED . . . Simply place guide next to material and "rock" tool into an upright position.
● CUTS RIGHT THRU IMBEDDED NAILS . . . wood, plaster, iron pipe, sheet metal, "Transite" and most other materials—even in cramped quarters.
● FITS HEAVY DUTY ¼" or ⅜" DRILL . . . as easy as changing bits! Overall length only 10¾"; weight only 3 lbs. 6 ozs.
● BUILT FOR CONSTANT DUTY OPERATION . . Built-in blower keeps Super-Saw cool even when used continuously and blows sawdust away from cutting line. Replaceable "Oilite", phosphor bronze and high speed ball bearings throughout. Write for Bulletin H5.

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The Portable MORSE ROTATOR

THE NEWEST ADDITION TO 25 YEARS OF SUCCESSFUL MANUFACTURING EXPERIENCE

MODEL 500

SAVES TIME! SAVES LABOR!
SAFELY ROTATES UP TO 500 LBS. AT 10, 20 OR 40 RPM

A powerful, compact motorized unit that will cut costs of mixing, tumbling, cleaning, etc. Scientifically engineered for smooth, safe revolving. Can be loaded by ONE MAN and is easily moved. The power drive has a ¾" dia. shaft and is equipped with self-aligning bearings. Four 4" dia. Neoprene drive wheels adjustable to take from 1 to 55 gal. cylindrical containers. Wt. before crating 137 lbs. Furnished with motor and gear reduction unit. *Write For Complete Information.*

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133 Dickerson Street Syracuse 2, N. Y.

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PACKAGING . . Plastic-film tapes with pressure-sensitive adhesive; sample card to show 15 colors available among 8 types. Color Chart C-ACCD, 4 pages. Minnesota Mining & Mfg. Co., 902 Fauquier St., St. Paul 6, Minn. **IEN-0532**

PIPE . . Made of "Uscolite" impact-resistant plastic; corrosion data, fittings for ½ to 2-in. pipe, also molded parts, ducts, table tops. Bulletin M-1127, 8 pages. United States Rubber Co., 1230-32 Sixth Ave., New York 20, N. Y. **IEN-0533**

PIPE FITTINGS . . Orifice flange fittings for flow measurement in a line; dimensional drawings and data on 300 to 1,500-lb. units, seal chambers. Bulletin 503, 12 pages. Taylor Forge & Pipe Works, Box 485-A, Chicago 90, Ill. **IEN-0534**

PISTON RINGS . . One-piece unit, 1 to 96 in., in which gap is sealed by a sliding tongue; features, suggested installation drawings. Catalog 101, 8 pages. Double Seal Ring Co., 2063-67 Montgomery St., Fort Worth 7, Texas **IEN-0535**

PLASTIC MOLDING . . Two injection machines, 1 and 2-oz. capacities; specification table, cut-away assembly view. Two leaflets, "Model H-200 Press", 2 pages each. Van Dorn Iron Works, 2683-87 E. 79th St., Cleveland 4, Ohio **IEN-0536**

PLATING . . Vacuum coating units; description, two-page summary on eight models by vacuum chamber, pumping system, gages. "Vacuum Coating Units," 4 pages. Distillation Products, 755 Ridge Road, Rochester 3, N. Y. **IEN-0537**

PLATING . . "Chromaster" Model A-20 chromium-plating machine for small tools and parts; captioned assembly drawing, operating steps. Bulletin IC-20, 4 pages. Ward Leonard Electric Co., 29-33 South St., Mount Vernon, N. Y. **IEN-0538**

PRESSES . . Hydraulic steam-platen presses; data summaries on units from 100 to 12,500 ton, notes on platen construction, applications. Bulletin 290, 20 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Philadelphia 42, Pa. **IEN-0539**

PRINTING . . "Apeco" photocopy equipment; description of the process, examples of work that can be duplicated, questions and answers. "Photocopying", 12 pages. American Photocopy Equipment Co., 2852 N. Clark, Chicago 14, Ill. **IEN-0540**

PROTECTING . . Goggles and other eye-protection equipment, listed by recommended design for 17 types of work in 20 industries. "Eye Safety Guide", 4 pages. American Optical Co., 12-16 Mechanic St., Southbridge, Mass. **IEN-0541**

PROTECTING . . Breathing equipment for hazardous-atmosphere service; description in the form of eight examples. "We Don't Need Breathing Equipment," 8 pages. Scott Aviation Corp., 1312-16 Depew Ave., Lancaster, N. Y. **IEN-0542**

PULVERIZING . . Crushers, hammer mills, dry-material blenders, air separators, vibrating screens; condensed data on a line. Equipment Bulletin, 8 pages. Sturtevant Mill Co., 4 Harrison Square, Boston 22, Mass. **IEN-0543**

PUMPS . . "Fluidyne" centrifugal pumps for general service; selection charts, performance tables, dimensions on ¼ to 150-hp. models. Bulletin B-2300, 24 pages. Peerless Pump Div., W. Ave. 26 & Humboldt, Los Angeles 31, Calif. **IEN-0544**

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BREVITY—Identify by IEN - 5146 if you write the maker

. . . the new separable

FLEXCO HINGED BELT FASTENERS

U. S. Patent No. 2,477,855

- For joining grader, trencher, ditcher and other earth moving conveyor belts.
- For belts ⅛" to ½" thick.
- A FLEXCO fastener that is HINGED. Has removable hinge pin.
- Troughs naturally, operates through take-up pulleys.
- Strong, durable . . . pull or tension is distributed uniformly across joint.

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IS TAMPER-PROOF

Realock Fence gives your plant property tamper-proof protection against trespassing, arson, theft and other costly hazards. That's because essential fittings are designed to permit the removal of bolts from the inside only.

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Making a quality product is YOUR business.. Packaging it properly is OUR business!

THAT IS WHY . . .

so many companies with U. S. Government contracts requiring method IA-3, IA-8, IA-9, IIa, IIb or IIc type packaging in flexible barrier material, use AMSCO packaging equipment.

AMSCO equipment is specifically designed to properly fabricate, handle and seal barrier materials. During World War II, AMSCO pioneered in the development of dependable, diversified barrier packaging equipment.

Avoid the danger of improper packaging and great loss of money by rejects. SEND FOR YOUR COPY of AMSCO BOOK "BARRIER TYPE" Packaging for U. S. Government orders. Available at no charge. Write Dept. IEN.

IMPORTANT

Many Government contracts specify packaging in Polyethylene, Cellophant or Pliofilm. AMSCO has equipment for fabricating, handling and sealing these materials.

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31-31 48th Avenue, Long Island City 1, N. Y.
Specialists in diversified Packaging Equipment

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$33.30
F.O.B., PGH.

ACCURATE CO_2 Tests in 40 Seconds!

Other outstanding features of the FYRITE CO_2 Indicator are its durable, fool-proof construction and unmatched convenience of operation. Only the four simple steps shown at the left are required for a complete analysis. The instrument comes complete with chemical charge good for at least 300 readings. Replacing chemical merely requires removing four screws that hold top assembly in place.

Write for Leaflet 795

OXYGEN Indicator designed on same principle also available. Write for Leaflet 700.

BACHARACH INDUSTRIAL INSTRUMENT CO.
7000 BENNETT STREET—PITTSBURGH 8, PA.

BREVITY—Identify by IEN - 5150 if you write the maker

For Access Panel and Door Assemblies

QUICK-LOCK speeds up mounting and demounting detachable panels. A 90° turn locks and unlocks it in a jiffy. Flexible mounting and tapered stud makes it ideal for assembling curved sheets and insures a tight fit when locked. Stud is self-ejecting when unlocked. Minimum deflection is assured—only initial loads are carried by the helical spring. Solid supports take up increased loads.

Call in a Simmons Engineer and compare QUICK-LOCK's economy with your present fastening method.

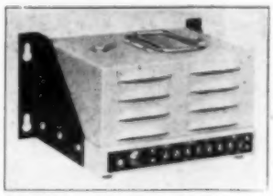
SIMMONS FASTENERS
SIMMONS FASTENER CORP. • 1758 No. Broadway, Albany, N. Y.

BREVITY—Identify by IEN - 5151 if you write the maker

BREVITY—Identify by IEN - 5153 if you write the maker

CONTROL . . ELectronic amplifier to measure and control processes

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.



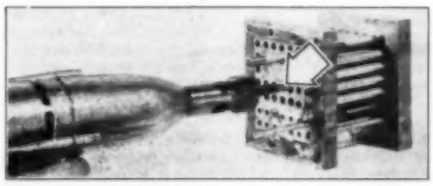
Model 1411 Inductronic is a new electronic dc. amplifier to measure the related physical quantities of input devices such as thermocouples, radiation receivers, strain-gage bridges, resistance thermometers, photocells. It provides stepless control of temperature for precise regulation of baths, ovens. It will handle measurements from intermittently-connected input sources, as by commutation, with independence of contact-time proportion. It provides slow-speed response to average an indication subject to fluctuation with response time to several minutes. It permits high speed integration of potential or current against time for measurement of magnet flux, pulse energy, photograph exposure.

Assembly is in a housing measuring 9 by 8 by 6 inches. The cover is equipped with a carrying handle and the base has rubber feet. Two mounting brackets are supplied for permanent surface or panel assembly.

BREVITY—Identify by IEN - 5154 if you write the maker

EXTRACTING . . Tube de-expander for tube removal free from scoring

Source: FRANKLIN MFG. CO.
147-51 S. 4th St., Philadelphia 6, Pa.



Five sizes of the company's new Dudley tube de-expander cover a range of tube sizes from ¾ to 1 inch. Application is in pairs, one right hand and one left hand, with drive by pneumatic impact wrenches supplied by the user. The impact action, in a rotary direction, loosens the tube in the tube sheets and permits its removal without scoring the sheet longitudinally. List price per pair is $45.

BREVITY—Identify by IEN - 5155 if you write the maker

RUBBER PRODUCTS . . Booklet outlines facilities for testing and developing rubber and similar materials

V. L. Smithers Laboratories
2704-8 First National Tower, Akron 8, Ohio

Test facilities are stressed in new 16-page bulletin on the company's service for rubber, rubber-like materials and compounding ingredients. Pictures and text describe factory-simulated operating conditions, physical testing, controlled environment, accelerated aging, dynamic fatigue.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 5156 if you write the maker

BREVITY—Identify by IEN - 5157 if you write the maker

CYCLONE METAL CONVEYOR BELTS
USS UNITED STATES STEEL

BREVITY—Identify by IEN - 5158 if you write the maker

BREVITY—Identify by IEN - 5159 if you write the maker

Quick, Thorough Cleaning!

General Electric Heavy-duty Vacuum Cleaners

In more and more plants, General Electric Heavy-duty Vacuum Cleaners are being used because they speed thorough cleaning of floors and above-the-floor areas.

These powerful cleaners also provide efficient portable dust control around machines, make gathering of small metal or other scrap easy. Wet pickup is also a feature of this model. Write for details.

MAIL TODAY

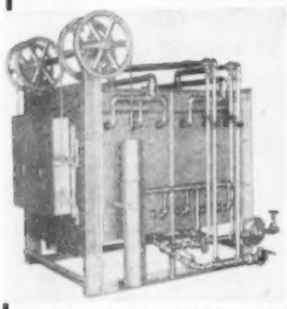
General Electric Company, Dept. 22-3526
1285 Boston Ave., Bridgeport 2, Connecticut
Send, without obligation, details about General Electric heavy-duty cleaning equipment.

Name _____
Firm _____
Address _____
City _____ State _____

GENERAL ELECTRIC

BREVITY—Identify by IEN-5160 if you write the maker

LARGE CAPACITY OVEN TYPE FURNACES



HEAT-TREAT LARGE PARTS Uniformly

Maintains temperatures from under 1000° F. up to 2000° F.

The extreme flexibility of AGF Improved Oven Furnaces to standard or special purpose adaptation is one reason for their popularity. For example—The top and bottom burners may be operated independently, thus giving a wide operating temperature range.

AGF FURNACES come up to required temperature, more quickly and evenly. They require less gas. Write for Bulletin No. 200.

AMERICAN GAS FURNACE CO.
974 LAFAYETTE STREET, ELIZABETH 4, N. J.

BREVITY—Identify by IEN-5161 if you write the maker

VULCAN

ELECTRIC SOLDERING TOOLS

7/16" 1/2" 7/8" 1" 1 1/8" 1 3/8" 1 5/8" 1 3/4"

SCREW TIP

Robustly built for day-long work. Cool wood handle with the "hang" or balance that makes work easy. Low operating cost.

A size for every soldering job — radio work — tinware — gutters — aircraft — metal cornices — refrigerators — ventilators — ventilating and air conditioning equipment — auto bodies, etc.

VULCAN ELECTRIC COMPANY
DANVERS 8, MASS.

Makers of Vulcan Electric Soldering Tools, Electric Solder Pots, Electric Glue Pots, Electric Branding Irons and Electric Heating Units.

BREVITY—Identify by IEN-5162 if you write the maker

Don't Underestimate the power of the BANTAM BULLY!

The amazing Bantam Bully air hammer gives you real power in an easy-to-use size. It is 5" long and weighs only 22 ozs. Exclusive metering trigger regulates the power from a feather touch to a powerful blow. Full speed and power attained on less than 6½ C.F.M. of air.

Use it for scaling, chiseling, peening, tamping, cutting, routing, grooving, caulking, channeling, chipping, driving, drilling, marking, and hundreds of other applications.

Write for full details on the Bantam Bully, Big Bully, Bully blow gun and the Bully Fulflo air filter.

Superior Pneumatic division of **Herbrand Tools**
4758 WARREN ROAD, GARFIELD HEIGHTS, OHIO

NEW LITERATURE—Continued

"Number of pages given for each"

PUMPS . . Rotary pumps, unmounted to use with other equipment; specifications on 10 to 300-gpm. units, operating data, dimensions, parts. Bulletin 3001, 4 pages. Viking Pump Co., 49 Calvert St., Cedar Falls, Iowa **IEN-0545**

PUMPS . . Model-AF centrifugal acid pump; details on design without a stuffing box, typical models and drive arrangements, materials. Bulletin E-7000, 8 pages. A. R. Wilfley & Sons Inc., Box 2330-A, Denver 1, Colo. **IEN-0546**

REFRACTORIES . . "JM-3000" insulating fire brick for exposed or back-up use to 3,000 deg. F.; physical and thermal properties. Folder IN-126A, 4 pages. Johns-Manville, 22 E. 40th St., Rm. 1201, New York 16, N. Y. **IEN-0547**

REFRIGERATING . . Compressor-condenser assemblies, ¼ to 30 hp.; condensed specifications, sectional views, engineering and selection data, list prices. Catalog 43, 44 pages. Brunner Mfg. Co., Broad & Utica Sts., Utica 1, N. Y. **IEN-0548**

REFRIGERATING . . Type-VS shell-and-tube ammonia condensers; captioned assembly view, review of features, construction details and picture examples of use. Bulletin 228-E, 8 pages. Frick Co., 320 Broadway, Waynesboro, Pa. **IEN-0549**

RESEARCH . . Examples of apparatus developed for special research jobs such as a mass spectrometer for rocket use; illustrated summaries. "Project Digest R-8," 50 pages. Cook Research Labs., 1455 Diversey, Chicago 14, Ill. **IEN-0550**

RESISTORS . . Type-LP water-cooled 5-kw. resistor for high-frequency service as in dielectric heating; curves, installation, dimensions. Bulletin F-2, 4 pages. International Resistance Co., 407 No. Broad St., Philadelphia 8, Pa. **IEN-0551**

RIVETING . . Automatic rivet-setting machines for aircraft, reinstated for defense production; rivet types, machine data. "Aircraft Riveters," 24 pages. Chicago Rivet & Machine Co., 9002 W. Jackson Blvd., Bellwood, Ill. **IEN-0552**

RUBBER PRODUCTS . . Abrasion, chemical, oil, temperature and weather-resistant materials; properties and uses, production, examples. Catalog 51-SR-1, 16 pages. Stalwart Rubber Co., 152 Northfield Road, Bedford, Ohio **IEN-0553**

SAWING . . Bandsaw parts including rigid wheels, demountable tires, adjustable guides, and a shadow-line light; specifications. "Bandsaw Accessories," 6 pages. Carter Products Co., 57 Mt. Vernon, Grand Rapids 4, Mich. **IEN-0554**

SCAFFOLDS . . Sectional steel units for construction and repair work; condensed descriptions, illustrated assemblies to show application. Folders PS-24 and 26, 4 pages. Wilson-Albrecht Co., 3578 Wooddale, Minneapolis 16, Minn. **IEN-0555**

SEPARATING . . Permanent-magnet assemblies to remove tramp iron from pneumatic, gravity-flow or liquid lines; dimensional drawings, uses. Bulletin 702, "Magnetic Hump," 4 pages. Eriez Mfg. Co., 1303 E. 12th St., Erie, Pa. **IEN-0556**

SIGNALING . . Electronic detector for metal particles in non-metallic material; specifications on four models, examples. Folder 1-J-9380 Rev., 4 pages. Radio Corp. of America, 1941 Front & Cooper, Camden 2, N. J. **IEN-0557**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-5163 if you write the maker

A PAID NEWS ADVERTISEMENT BY HONAN-CRANE CORP.

SUMP CLEANER... "One-man" mobile unit removes dirty oils, coolants

Houdaille Sump Cleaner provides quick, simple removal of dirty cutting oils or coolants containing chips, abrasives or grindings from machine tool sumps. Unit equally suitable for cleaning quenching and settling tanks or draining liquid and chemical vats. Cleaning of individual machine accomplished in 10 minutes or less.

Three-way valve permits unit to be used either for suction to remove dirty coolant from sumps, or for pressure to dispense clean coolant to sumps from storage or purification equipment. Mercoid liquid level control, actuated by float within tank, stops pump when tank is full, preventing overflow and spillage. Drain valve provides for salvaging usable oils and coolants.

Fully enclosed vacuum pump and ½ hp. repulsion induction motor operated by single manual switch. Unit equipped with 10-ft. heavy duty extension cord and plug; 10-ft., 1¼" neoprene suction hose with 30" nozzle. Large 28" diameter, roller bearing wheels and caster auxiliaries assure easy movement over any kind of flooring. Proper balance on primary axle makes dumping easy.

One man can easily operate unit after 5 minutes of instruction. Two sizes available: 80 to 125 gallon capacities.

HONAN-CRANE CORPORATION
subsidiary of HOUDAILLE-HERSHEY CORPORATION
802 Wabash Avenue, Lebanon, Indiana

BREVITY—Identify by IEN-5164 if you write the maker

"NATIONAL"

Self Lubricating Bronze Bearings

Molded to Your Accurate Specifications

Our "DUCTILOY" bearings are made from a unique powder formula, perfected by "National" Engineers, that result in a bearing with properties possessed by no other bearing on the market. Our special alloy makes these bearings highly ductile and eliminates waste due to breakage at installation or from rough handling.

We are also very proud of our line of spherical bearings and of our hard won reputation for the delivery of intricate powdered metal parts, heretofore considered impossible to produce.

Applicable to all medium and light weight service, such as Automobile, Electrical Appliances, Farm Equipment, Domestic Appliances, such as Sweepers, Refrigerators, Washers, Portable Electric Tools, etc., and Industrial Machinery.

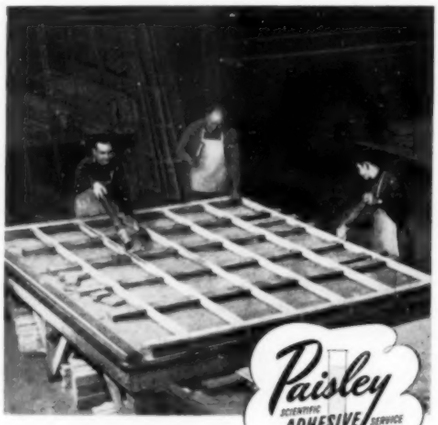
LET US HELP SOLVE YOUR BEARING, BUSHING AND SHAFT SEALING PROBLEMS

We are equipped to handle your requirements in any quantity.

NATIONAL MOLDED PRODUCTS, INC.

Manufacturers of
Sintroy, Ductiloy and Tubeloy Bearings
1945 MILL STREET • ST. MARYS, PA.

BREVITY—Identify by IEN-5165 if you write the maker



FOR THOSE *HARD-TO-GLUE* JOBS . . GET A PAISLEY Scientific GLUE!

WHETHER it's a big pre-fab house or the smallest wood-working operation, there's a *better* Paisley Scientific Adhesive to do the job. Regardless of the *types* of materials to be bonded, the *method* of application, or the *setting speed* required, Paisley will develop the ONE best, most economical adhesive for the operation! Get all the facts about these three basic Paisley woodworking glues . . 1. Paisley LIGNOTITE Dry Casein Glues, 2. Paisley fast-setting Liquid Resin Wood Glues, 3. Paisley Liquid Animal Glues. Use the coupon below . . just check the items in which you are interested.

PAISLEY "ACCESSORY" ADHESIVES FOR WOODWORKING JOBS . . .

FOR BONDING

1. Linoleum to wood
2. Cloth to wood
3. Cardboard to wood
4. Plastic table tops to wood
5. Coated fabric coverings and linings to wood
6. Special adhesives for shop repairs, exhibits, housewares, toys, cedar chests, furniture, industrial wood products, etc.

TELL US YOUR NEEDS

TEAR OUT, PASTE ON LETTERHEAD AND MAIL TODAY!

☐ LIGNOTITE Dry Casein Glues
☐ LIQUID RESIN-WOOD GLUE
☐ LIQUID ANIMAL GLUE
☐ ADHESIVE OPERATION DATA SHEET
(You fill it in and return for FREE laboratory recommendation)

PAISLEY PRODUCTS INCORPORATED
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products
1776 CANALPORT AVE., CHICAGO 16, ILL. • PHONE CANAL 6-2219
630 W. 51st STREET, NEW YORK 19, N. Y. • PHONE COLUMBUS 5-2880

BREVITY—Identify by IEN-5167 if you write the maker

Only 20 Seconds for a Complete Test!

The NEW DWYER TRANSPARENT

CO_2 INDICATOR

The Dwyer 6900 is a really new CO_2 Indicator that assures greater efficiency and accuracy in operation. It actually takes but 20 seconds to make a complete test—and you can make over 500 tests per refill. Body is fabricated from a transparent solid "lucite" bar, making it practically unbreakable. Open-faced dial is easy to read. Furnished with a circular efficiency slide rule. Available in heavy metal case with provision for stack thermometer, draft gage and smoke tester.

Also manufacturers of Draft Gages, Smoke Detectors, Manometers, Pitot Tubes, etc

F. W. Dwyer Mfg. Co.

307 South Western Avenue • Chicago 12, Illinois

BREVITY—Identify by IEN-5168 if you write the maker

CUT COSTS

BY CUTTING faster with a STONE Swing-Cut M14

A Low-Cost Metal Cut-Off Machine That Performs Production Cutting Of Ferrous and Non-Ferrous Solids Up to 1½"—Pipe and Structurals Up to 2½"

CUTS AT THE RATE OF *4 Seconds* PER SQUARE INCH

And May Be Used for Miscellaneous Cutting of 2" Solids (15 seconds).

Swing-Cut M14 Speeds Up Cutting Operations — Prevents Bottlenecks

- cuts faster, cleaner with positive drive
- swivels up to 45° in either direction
- 32" x 34" bench model — app. weight 300 lbs.
- designed for flexibility — easy, safe operation

Swing-Cut M14 asks little — gives a lot! Available at a lower price than any other machine of its capacity, this rugged little brute requires only 9 square feet of bench space to perform fast, clean, low-cost abrasive cutting. Engineered with positive drive without the use of belts (an exclusive Stone feature), the Swing-Cut M14 full 3½ h.p. geared-in-head motor delivers maximum constant power — increasing cutting speed, affording greatest efficiency and insuring longer wheel life.

CUTTING DATA

Material	Size	Time per Cut
COLD ROLLED STEEL — Bar Stock	1" x 1½"	6 sec.
HIGH SPEED STEEL — Bar Stock	1" x 1"	4 sec.
ALUMINUM — Bar Stock	1" x 1½"	3 sec.
BRASS — Pipe	1½" O.D.	3 sec.
COPPER — Bar Stock	1" x 1½"	5 sec.

Write for Further Information

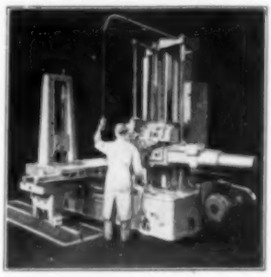
STONE MACHINERY CO., INC.

310 Fayette St. Manlius, N. Y.

BREVITY—Identify by IEN-5170 if you write the maker

BORING . . Horizontal machine, 4-in. spindle has 30 in. of travel

Source: GIDDINGS & LEWIS MACHINE TOOL CO. 140-44 Doty St., Fond du Lac, Wis.



Speed range for this new No. 340-T table-type horizontal boring, drilling and milling machine is 10 to 1,300 rpm. in 45 quick-change steps. There are 18 spindle feeds ranging from .005 to .250 in. in a standard range and an additional 18 between .002 and .116 in. in a high-speed range. These include positive feed for seven thread pitches between 4 and 20 per inch. In addition to the boring feeds there are 18 milling feeds for the headstock and table movement between .5 and .25 ipm. Available feeds are completed by a reduced saddle-feed range for fine boring between .0125 and .625 ipm., all in geometric progression.

The table measures 36 by 72 in. in the standard assembly. Maximum distance from its top to the spindle center is 36 inches. The spindle can be lowered to 4½ in. below the top. Cross-table travel is 60 inches. Longitudinal travel of the saddle with the end support in place is 28 inches. Rapid traverse for the table, saddle and headstock units is at 120 ipm. Maximum distance from the base of the spindle sleeve to the end support is 74 in. with minimum distance at 44 inches. The machine is driven by a 20-hp. 3-phase, 220/440-volt 60-cycle ac. ball-bearing motor.

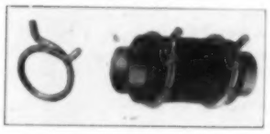
The 4-in. nitralloy spindle rides in anti-friction bearings. Other features include hardened ways on the bed and saddle, an automatic positioning device, swiveling pendent push-button control, quick speed change at two hand cranks, hardened gears, pump-circulated oil lubrication.

Bulletin 34-T, 8 pages, presents detail technical information and specifications. Catalog No. 300-T, 18 pages, assembles illustrated data on the company's Type-300 line.

BREVITY—Identify by IEN-5171 if you write the maker

HOSE FITTINGS . . Spring clamp grips hose when released in position

Source: CORBIN HOSE CLAMP DIVISION 51 High St., New Britain, Conn.



New small size for connections measuring ⅜ in. in outside diameter has been added to the company's line of spring-clamp hose fittings, previously described IEN-9969-48. The line now covers a range of sizes from ⅜ to 2⅝ in. for use on hose made of rubber, fabric, plastic to handle air, gases or liquids.

The spring steel wire from which the clamp is made is cadmium plated and is supplied with a special plier to expand its diameter. Releasing the plier permits the clamp to grip in holding position where it exerts uniform pressure around the circumference of the hose.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-5172 if you write the maker

PREVENT Contraction-Expansion TROUBLE WITH PIPING

This folder shows how you can

- ✔ cut expansion joint costs
- ✔ enjoy virtually maintenance-free service
- ✔ select the joint to meet your particular problem

If you are designing to take care of contraction-expansion problems, this folder can help you. It describes fully the type Dresser Expansion-Joint to use under any given condition. Photographs and sectional drawings of each type are shown with complete instructions for ordering and installing. Specification tables are included. Add this valuable folder to your files by writing to Dresser for your free copy today.

DRESSER EXPANSION JOINTS

DRESSER MANUFACTURING DIV.

22 Fisher Ave., Bradford, Pa. (One of the Dresser Industries)

BREVITY—Identify by IEN-5173 if you write the maker

CHOICE OF THE NAVY FOR *Dependable Controls*

GUARDIAN RELAYS

On peacetime boats of commerce and travel—on warcraft—Guardian Relays play major control roles, ranging from Marine radio to navy aircraft. The Series 335 D.C. *approved* Guardian Relay shown above is typical of Guardian units built to rigorous aviation standards. Meets the 10-G Vibration Test and the Mil-R-6106. Generous coil winding area permits single winding up to 15,000 ohms. Parallel and double windings available. WRITE ... FREE CATALOG

GUARDIAN ELECTRIC

1620-F W. WALNUT STREET CHICAGO 12, ILLINOIS

A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

BREVITY—Identify by IEN-5174 if you write the maker

Kester Solder

Kester makes over 100,000 different types and sizes of flux-core solders. Kester Solders are made from the finest grades of tin and lead available.

Preferred

Kester Solders are not only preferred by industry, but individual workers also insist upon Kester to enable them to do their best work.

Saves Time

Contact Kester's Technical Department on your soldering problems. There is no obligation.

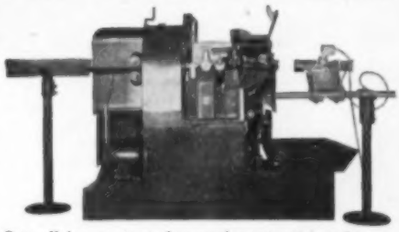
KESTER SOLDER COMPANY
4201 Wrightwood Avenue
Chicago 39, Ill.
Newark, N. J. Brantford, Can.

KESTER SOLDER

SEND FOR FREE MANUAL: "SOLDER AND SOLDERING TECHNIQUE"

BREVITY—Identify by IEN-5175 if you write the maker

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine — *any length you want.* FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing — Cuts and Chamfers both outside edges of ½" OD wall tubing, 5" lengths, every 2.5 seconds.

1¼" Cold Rolled — Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing — Cuts and Chamfers both outside edges, pieces 3" long. One every 1 seconds.

4" THREADED STUDS

Modern Automatic Cutting-Off Machines available in 2 sizes, handling work up to 3" O.D.

Cut and chamfered at one time—in 8 seconds—from 10 ft. length of stock already threaded 1¾" U. S. Standard. Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

WRITE for CATALOG

MODERN MACHINE TOOL CO.

JACKSON MICHIGAN

BREVITY—Identify by IEN-5176 if you write the maker

MOTO-TRUC
FREE new BULLETIN NO. 51

Showing Equipment for
SPACE, TIME AND LABOR SAVING IN MATERIAL HANDLING
Write for your copy today

PALLET TRUCKS, PLATFORM TRUCKS, HI-LIFT TRUCKS

The MOTO-TRUC Co.
1952 E. 59th Street
CLEVELAND 3, OHIO.
Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

BREVITY—Identify by IEN-5177 if you write the maker

Complete Line of
SPRAY NOZZLES

Whatever your spraying job, there is a Delavan nozzle designed to suit your particular needs.

Write Now for
CATALOG NO. 30.

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

BREVITY—Identify by IEN-5178 if you write the maker

Mathews Roller Conveyers

"ENGINEERED TO SERVE PRODUCTION"

● One of the many widely applied types of conveying equipment designed and built by Mathews Conveyer Company.

The complete line of Mathews designed—Mathews built Conveyers includes the following:

CHAIN CONVEYERS • LIVE ROLLER CONVEYERS • WHEEL CONVEYERS
ELEVATING CONVEYERS • BELT CONVEYERS • TROLLEY CONVEYERS
ROLLER SPIRAL CONVEYERS • PORTABLE CONVEYERS
SPECIAL CONVEYING MACHINERY

MATHEWS CONVEYERS
GENERAL OFFICES
Mathews Conveyer Company . . Ellwood City, Pennsylvania
PACIFIC COAST DIVISION
Mathews Conveyer Company West Coast . San Carlos, Calif.
CANADIAN DIVISION
Mathews Conveyer Company, Ltd. . . . Port Hope, Ontario
Engineering Offices or Sales Agencies in Principal American and Canadian Cities

NEW LITERATURE—Continued

"Address given so you can write direct"

STAMPINGS . . Mechanical linkages to produce a specified motion or movement; diagrams to show examples, notes on production facilities. "Motions," 12 pages. Standard Products Co., Reid Div., 2128-32 W. 110th, Cleveland 2, Ohio **IEN-0558**

STAPLING . . Machine to drive staples through metal in product assembly; specifications, types of clinch possible, illustrated application examples. "Metal Stitching," 8 pages. Bostitch Inc., 333 Mechanic St., Westerly, R. I. **IEN-0559**

STEELS . . For aircraft use; sizes and properties of alloy and stainless steels, condensed data on AN, QQ, AMS and MIL material specifications. "Aircraft Steels," 68 pages. Joseph T. Ryerson & Son, Box 8000-AA, Chicago 80, Ill. **IEN-0560**

STORING . . Racks made from the company's formed steel channel and fittings; standard fitting details, examples of special assemblies. Catalog 600, 24 pages. Unistrut Products Co., 1011-15 W. Washington Blvd., Chicago 7, Ill. **IEN-0561**

TACHOMETERS . . "Micromax" and "Speedomax" recording instruments for machine operating speed; measuring elements, instrument details. Catalog N-27, 20 pages. Leeds & Northrup Co., 5934 Stenton, Philadelphia 44, Pa. **IEN-0562**

TESTING . . Magnetic-particle inspection and flaw-detection equipment for magnetizable parts; description of methods, equipment, use. Bulletin B-415-3, 8 pages. Magnaflux Corp., 5914 Northwest Highway, Chicago 31, Ill. **IEN-0563**

TESTING . . Electronic instrument of Danish make to measure pressure and vibration; specifications, operating principle, typical chart records. Folder 525-E, 6 pages. Mogens Bang & Co., Box 665-A, Old Saybrook, Conn. **IEN-0564**

TESTING . . Variable-frequency oscillator, 1 to 120,000 cycles; frequency ranges, basic oscillator circuit, calibration stability. "Model M-2," 4 pages. Southwestern Industrial Electronics, 2829-33 Post Oak Rd., Houston 9, Texas **IEN-0565**

THREADING . . Model-E power threading machine for pipe and bolts, ¼ to 2 in.; description of the machine and of cutting and threading equipment. Bulletin E-1, 4 pages. Beaver Pipe Tools, 200-300 Dana Ave., Warren, Ohio **IEN-0566**

TIMING . . Stopwatches, timers, chronographs; dial illustrations and condensed descriptions, also waterproof shockproof wrist watches. Catalog, 8 pages. Clebar Watch Agency, 551 Fifth Ave., 18th Floor, New York 17, N. Y. **IEN-0567**

TRAPS . . And other steam equipment including reducing valves, regulators, pump governors, controls; size and selection data. "Steam Specialties," 21 sheets. C. E. Squires Co., 18500-504 Syracuse Ave., Cleveland 10, Ohio **IEN-0568**

TRUCKS . . Type FT-60 electric fork lift truck, 6,000 lb. capacity; construction and specifications in detail, attachments, uses. Bulletin 1325, 8 pages. Baker Industrial Truck Div., 1248-52 W. 80th St., Cleveland 2, Ohio **IEN-0569**

TRUCKS . . Side-loading power lift truck; two-page captioned assembly view, picture applications alone and with attachments, turn diagram. Bulletin, "Traveloader," 12 pages. Lull Mfg. Co., 3610-14 E. 44th, Minneapolis 6, Minn. **IEN-0570**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN-5179 if you write the maker

Ready Patch

REPAIRS INDUSTRIAL FLOORS IN MINUTES

Permanent, Economical. Bonds perfectly to concrete or wood floors. Resilient under heaviest traffic. Won't crack, chip, soften, corrugate. **Ready to Use.** No heating, mixing, or "extras" to add. Ready just as it comes from the container.

ORDER TODAY—SATISFACTION GUARANTEED
Only $90.00 per 55-Gallon Drum, including Primer — or $55.00 for ½ Drum — F.O.B. St. Louis, Mo.

Bitucote PRODUCTS CO.
SEND for Free Bulletin: "Stop Floor Hazards"
1411 Central Industrial Drive
ST. LOUIS 10, MO.

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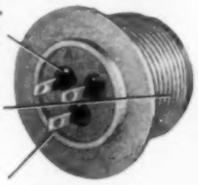
CANNON PLUGS | hermetically sealed

Cannon Type "GS" (glass sealed) connectors are hermetically sealed for use on position indicators, tachometers, and other instruments that must be sealed to avoid moisture condensation resulting from sudden altitude change or other causes.



Glass beads fused to shell and contact, have approximately same coefficient of expansion as steel shell, insulate contact and provide perfect seal.

Shell machined from cold rolled steel. Hot tin dip is standard finish. GS02 is receptacle type; GS06 plug with coupling nut.

Contacts machined from cold rolled steel. Flat eyelet at wire end is standard. Solder cup type contact available on special order.

Request Bulletin No. GS-2 for engineering data.

CANNON ELECTRIC
3300 Humboldt Street, Los Angeles 31, California. Canadian factory: Toronto, Ontario. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

BREVITY—Identify by IEN-5181 if you write the maker

"The eye of the master will do more work than both his hands."
—Ben Franklin's Almanac, 1757

Touring thy plant with a critical eye can do more for the health of thy business than a trip to Washington.
—Acme Steel Notebook, 1951

Your management eye needs to be a dozen places at once these days—on supplies, on production, on deliveries and all over your plant to keep efficiency high and morale up.

Your Acme Steel representative is ready to help bring you greater thrift in the use of Acme Steel's flat steel strapping and stitching wire in your packaging, shipping, and materials handling operations. He may be able to suggest more efficient ways to use Acme Steel products and accessories to improve your use of the available supply.

In spite of an increase in productive capacity, U. S. military requirements for some products make it impossible for Acme Steel to meet all the demands of the 50,000 customers, representing nearly every American industry, in these rearming times. But Acme Steel tries to help in every way we can—we always have for the past 71 years.

Information for ready reference on Acme Steel products is available upon request.

ACME STEEL COMPANY
Dept. IEN-51, 2838 Archer Avenue, Chicago 8, Illinois
To contact the nearest of our 41 Service Offices in the United States and Canada, check your telephone directory, or write us.

ACME STEEL

Acme Steel Company has enjoyed sound, steady growth under the American business system of open competition. Since 1901 we have made 287 consecutive dividend payments to our stockholders.

5 things you can do to keep your Acme Steel Strapping Tools on the job:

1. Clean and oil every week.
2. Check and clean gripping dogs weekly. Replace when teeth are worn.
3. Detect worn punches and jaws early by checking sealed joints regularly. If in doubt, submit samples, identified by model and serial number, to Customer Service Department, Acme Steel Company.
4. Keep parts list and supply of spare parts handy to make minor repairs. Additional parts lists supplied upon request.
5. Ask us about the Acme Steel "3-WAY SERVICE PLAN" for equipment repairs.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHERS and ACME SILVERSTITCH WIRE for box stitching • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, barbed box straps, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, tool mounts, reel stands, coil holders, coil trays.

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PRENTISS

"BULL Dog"

MACHINISTS' VISES

Backed by 80 years of time proven acceptance by industry.

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Hundreds of plants have used them and still do.

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Insist on PRENTISS for that "EXTRA" vise service.

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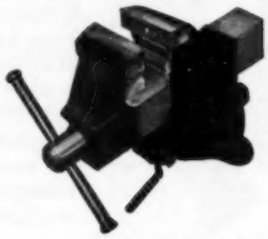
Your industrial Distributor can furnish.



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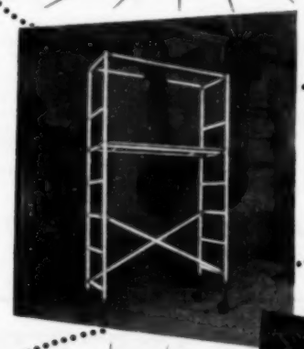
Compare EVERY FEATURE!

ALUMINUM
SECTIONAL LADDER SCAFFOLDS



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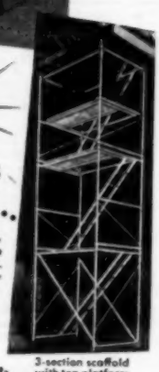
SECTIONAL ROLLING SCAFFOLDS



Definitely superior in design, workmanship, durability, strength and easy assembly, these aluminum scaffolds excel for safety, convenience and economy. Approved by Underwriters' Laboratories, Inc.

Stiffer aluminum tubing means greater rigidity and lasting service. Full welds on all coped joints.

Sockets have enough clearance for ease of assembly, yet provide a rigid scaffold.

Legs may be adjusted without danger of tipping or upsetting.

3-section scaffold with top platform at intermediate level.

Single-action brake positively locks caster wheels and swivel.

• Ideal for electrical installations, maintenance and many other types of work. Get the facts! Write for FREE Bulletins P55-20 and P55-22. See how these scaffolds can help you.

LADDERS AND SCAFFOLDS FOR ANY PURPOSE —Any Place —Any Time

for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.

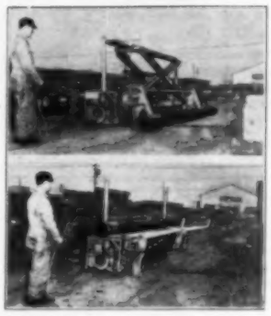
38-21 12th Street, Dept IEN • Long Island City 1, N. Y.

See Your Classified Telephone Directory for Nearest Office

BREVITY—Identify by IEN - 5186 If you write the maker

HANDLING . . Hydraulic pipe loader operates between car, ground, storage

Source: REPUBLIC SUPPLY CO. OF CALIF.
1751-55 Workman St., Los Angeles 31, Calif.



New Pridy Loader is mounted on pneumatic-tired wheels on a wheel base measuring about 18½ feet. It is equipped with hydraulically-operated swing arms on one side and a centrally located X-frame elevator. A length of pipe can be rolled onto the arms while they stand in lowered position. It is lifted onto the machine by application of hydraulic pressure supplied by an engine-driven pump. The pipe can be rolled from this position to the elevator and lifted to any height, maximum at 11½ ft., for discharge into a car or onto a storage rack. Movements in the opposite direction are handled in reverse order. Control is at a 4-way valve equipped with ropes so an operator can stand at a safe distance. Load capacity is 2 ton.

Hydraulic cylinders operating the hoist and arms are connected in opposed arrangement so the hoist is moved upward while the arms are lowered to the ground upon one movement of the 4-way valve. Movement in the opposite direction lowers the hoist and raises the arms. Controls located at the engine end of the assembly provide for travel to 5 mph., and for power steering when hydraulic fluid is directed under pressure to a steering cylinder. Travel pressure can be released and the unit connected by a tow bar to a vehicle for movement over a highway. Overall length without the towing arm is about 22½ feet. Overall width is 49 inches. Side clearance required on the lift-arm side and also on the discharge side, when using jacks, adds 34 inches. Elevator height is minimum at 40½ inches. Approximate list price is $5,500.

BREVITY—Identify by IEN - 5187 If you write the maker

PROTECTING . . Dust mask guards against non-toxic nuisance dusts

Source: GOGGLE PARTS CO.
1466-70 W. 9th St., Cleveland 13, Ohio

Flex-A-Foam Filter Mask is a new unit weighing one ounce. It fits over the nose and mouth to present a latex-foam barrier that permits passage of air but keeps out non-toxic nuisance dusts as small as .025 inch. The barrier is assembled in a frame made of DuPont plastic that is flexible to conform to a face contour. The head band of molded rubber completes the new assembly.

All parts can be sterilized by washing in warm soapy water and immersing in a mild formaldehyde solution. The unit lists at $1.30 in lots of 2 to 25. Filter elements list at 15 cents each in lots of less than 25. The head band adds 20 cents similarly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5188 If you write the maker

UNIFORM WATER LEVEL

IS *Automatically* MAINTAINED WITH

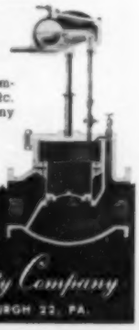
Golden-Anderson *Cushioned* VALVES

ALTITUDE CONTROL VALVE

Used for elevated tanks, reservoirs and standpipes and may be easily housed from inclement weather. Electrical attachment available for remote control operation.

COLDWATER FLOAT VALVE

For sensitive level control in mixing chambers, coagulating basins, track pans, etc. Patented cushioning feature prevents any surge or shock in operation.



Descriptive bulletins sent on request.

GOLDEN ANDERSON *Valve Specialty Company*

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10-DAY DELIVERY!

SIMPLEST... MOST COMPACT

O-M AIR HYDRAULIC WATER CYLINDERS

Speed production, cut costs and save space with Ortman-Miller cylinders. Full range of sizes (1½" to 8" bores) now *available for early delivery*. All machined steel and bearing bronze. Interchangeable parts and mounting brackets. Write today!

FREE TEMPLATES

Shows the full line in ½ scale.
Request your free complete set now.

ORTMAN-MILLER
MACHINE CO., INC.
1208 150th Street • Hammond, Indiana

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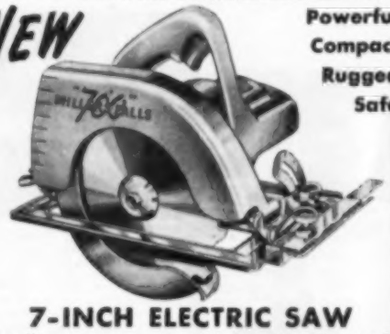
NEW

Powerful
Compact
Rugged
Safe



7-INCH ELECTRIC SAW

2⅜" capacity—cuts finished 2x4s at 45°

Ample power (½ h.p.), light weight (11 lbs.), and fine balance make this new Millers Falls No. 700 ideal for general construction use. Completely guarded saw and instant trigger switch make it safe to use. Precision helical gears transmit maximum power to blade. Ball bearings throughout assure smooth operation and long life. Ruggedly built. Quick adjustments for depth (2⅜" – ¾") and angle (90° to 45°). Adjustable ripping guide. Enameled steel carrying case. An outstanding new value!

MILLERS FALLS TOOLS Since 1868

The Mark of Superiority

Write for full details on the new No. 700 and Millers Falls 9" and 10" saws.

MILLERS FALLS COMPANY
Dept. P
Greenfield, Mass., U. S. A.

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Unbreakable "workhorses"

STRONGER, SWIFTER
ForgeWelds

Brute strength and fluid smoothness—you get *both* in ForgeWelds. Day-in and day-out—under heaviest loads and relentless pounding—these extra-tough casters keep rolling on. And how they roll! Healing units equipped with ForgeWelds glide along on the finest ball bearing swivels and roller bearing wheels... speed up handling in any plant. What's more, once these "workhorses" are on your trucks, replacements will be rare indeed. ForgeWelds come in all types and sizes for all needs.

Makers of: Power Lift Trucks • Hand Lift Trucks • Lifters • Cranes • Bollies • Skids • Truck & Trailer Casters • Wheels

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Executive Offices: Albion, Michigan
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Backstand Method Saves Time!

Toledo Steel Tube Co. saves 2 hours per operator per day in finishing department

They point out these advantages of the backstand belt method over the set-up wheel method:

1 Time is not lost in making set-up wheels. Formerly the operators were given 2 hours a day for making their set-up wheels.

2 One backstand belt will outlast 4 to 5 set-up wheels for this application.

3 Belts maintain a flat surface for the grinding and polishing operation, whereas set-up wheels became rounded and needed dressing from time to time.

4 The uniform grit on the belts gives a better finish than did the rolled-on grit of the set-up wheels.

If you are grinding, polishing or finishing flat or contoured surfaces, cast pieces, stamped pieces or forged pieces, write today for our free booklet, "Facts About Backstand Belt Grinding and Polishing."

We recommend buying through your industrial distributor

ARMOUR *Coated Abrasives Division*

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Pannier MARKING INKS

• You get the exact ink you need for clear, sharp, readable marking when you use the Pannier "Master Marker" line. For there's a Pannier Ink to mark nearly any kind of surface under almost any service condition. The wide range of properties of this complete line includes drying under oil; heat resistance; solubility in water and other fluids; permanency; etching or non-etching; and many others. Our laboratory will gladly recommend the right ink and method of application — even work with you in developing a special ink to meet unusual requirements. Just tell us your marking problem.

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REPLACE manual feeding of drill presses with Bellows "Controlled-Air-Power" Feeds. Infinitely variable feed and retract speeds, plus exact control of power thrust permit proper feed for all metals and plastics. Automatic "checking" at the breakthrough assures smooth edges in through drilling. Accurate depth control and deep hole drilling features give a range of flexibility unequalled in any power feed.

Quickly and easily applied to standard drill presses.

Write for Bulletin DF 105-R

Address: Dept. IEN 551, The Bellows Co., Akron 9, Ohio.

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"Send us your own new literature for review"

TRUCKS . . Special-body motor vehicles, Ford and Mercury; condensed details on carry-all, patrol, ambulance, and sedan-coach models. Seven data sheets, 2 pages each. Shop of Siebert Inc., 628 Southard Ave., Toledo 2, Ohio **IEN-0571**

TUBES . . And pipe of non-hardenable ferritic stainless steels for pressure and mechanical service; properties, fabrication, uses. Bulletin TDC-140, 4 pages. Babcock & Wilcox Co., 85 Liberty St., Room 1011, New York 6, N. Y. **IEN-0572**

VALVES . . "Shear-Seal" hydraulic operating valves for pressures to 6,000 lb.; drawings and data on selector, shut-off, dual-pressure units. Catalog 1B-1, 42 pages. Barksdale Valves, 1564 E. Slauson Ave., Los Angeles 11, Calif. **IEN-0573**

VENTILATING . . "Fresh-Air Maker" ventilating fan; specifications on 24 to 48-in. sizes, installation, selection, accessories. Bulletin 517, 8 pages. Schwitzer-Cummins Co., 1123-37 Massachusetts Ave., Indianapolis 7, Ind. **IEN-0574**

WATER TREATING . . Colloidal material to minimize scale and corrosion in boilers; application instructions on boilers. "Boiler Water Treatment," 4 pages. Agava Products, 32-36 Exchange Place, Jersey City 2, N. J. **IEN-0575**

WATER TREATING . . Wetting agent to promote penetrating ability of water; description of theory, list of uses. Pocket folder, "Wet Water," 8 pages. Aquadyne Corp., 220 E. 42nd St., Room 1513, New York 17, N. Y. **IEN-0576**

WEIGHING . . Automatic scales for proportioning, blending and process control; illustrated representative designs with application notes. Bulletin 0550, 4 pages. Richardson Scale Co., 666-700 Van Houten Ave., Clifton, N. J. **IEN-0577**

WELDING . . Multiple-torch head to flame-cut a steel plate edge square or beveled; illustrated description, typical mounting positions. Folder ADC-669, 4 pages. Air Reduction Sales Co., 1656 Lincoln Bldg., New York 17, N. Y. **IEN-0578**

WELDING . . Electrodes for maintenance and repair welding; sizes and properties, notes on how to do welding, joint spacing. Pocket Bulletin R-11-3, 24 pages. Harnischfeger Corp., 4402 W. National Ave., Milwaukee 14, Wis. **IEN-0579**

WHEELS . . In solid-rubber, semi-pneumatic, pneumatic types, also swivel and rigid casters in a variety of wheel designs; descriptions, sizes. Looseleaf catalog, 16 sheets. Neilson Wheel Co., 1612-16 N. 12th, Milwaukee 5, Wis. **IEN-0580**

WINDING . . Machines to wind solenoid, transformer and electronic coils; models, specifications, examples of work, also counters, attachments. Catalog, 11 sheets. Geo. Stevens Mfg. Co., 6020-24 N. Rogers Ave., Chicago 30, Ill. **IEN-0581**

WOOD WORKING . . Carbide-tipped circular saw blades for wood and plastics; list and repair prices for 6 to 18-in. units, notes on "Vibra-Free" damping inserts. Bulletin CTS-2, 4 pages. W. F. Meyers, 1019 14th St., Bedford, Ind. **IEN-0582**

WRENCHES . . Adjustable, box, open-end, pipe, socket, torque wrenches; descriptive data on these and pliers, screwdrivers, hammers. Catalog 50, 32 pages. P & C Hand Forged Tool Co., Box 5926-A, Portland 22, Ore. **IEN-0583**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

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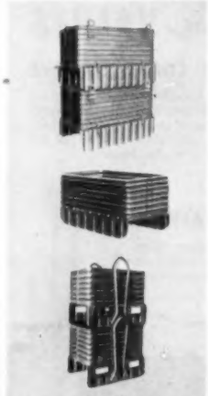
FOR STEEL BOXES TO FIT ANY MATERIALS HANDLING JOB . . .

CALL IN YOUR POWELL REPRESENTATIVE



Powell makes a complete line of all-steel box and box platform units. Whatever the job there's a Powell box to handle it — and for those special jobs Powell's noted JOB-DESIGNED service will supply special designs at surprisingly low cost. Ask the Powell man in your area, or write direct.

NOTE: *Due to the present national situation, if you can supply the steel, or issue a D.O. number, faster delivery of equipment is assured.*

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ORIGINATORS OF COLD FORMED ALL STEEL HANDLING EQUIPMENT
(In Greater Youngstown) Dept. 651

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2 of many types, functionally designed for working hands:

Multi-ply coating of NEOX—reinforced neoprene, extremely resistant to cutting, abrasion and chemicals. Fabric lining prevents snags, absorbs sweat, insulates, makes gloves easy on and off. Firm non-slip grip.

Natural rubber treaded palm and thumb. Has firm grip, wet or dry; wears like a tire.

We have the case records of hundreds of on-the-job tests, handling sharp, abrasive and slippery materials, with and without the presence of heat, oils, greases, acids, caustics, solvents and degreasants—where proper selection of work gloves has resulted in:

1: Fewer lost-time accidents
2: Faster, surer work handling
3: Less spoilage
4: Improved job attitude
5: And 40% to 70% savings in usual glove costs.

There's a correct glove for every job. Smart management makes it available.

Edmont Manufacturing Company
518 Orange Street, Coshocton, Ohio

World's largest maker of coated industrial gloves

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Measures dynamic strains and vibrations up to 50,000/second

. . . THE *BALDWIN* H-42A STRAINALYZER

Extends field of Baldwin SR-4® Strain Gage testing into high frequency field. Permits observation and recording of four phenomena simultaneously. Magnifies strains eletronically up to 20,000 times. For instantaneous strain measurements and impact loading conditions . . . instantaneous load, pressure and torque measurements in tests of rockets, propellants, engines, pumps and compressors . . . vibration studies of rotating and reciprocating members, to determine resonant period; determination of physical characteristics under impact. Completely self-contained, rugged, accurate.

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BALDWIN-LIMA-HAMILTON
TESTING HEADQUARTERS
Philadelphia 42, Pennsylvania

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SAW BEFORE BREAKING
WITH A Clipper CONCRETE SAW

• PATCHES
• TRENCHES
• CONTRACTION JOINTS

You save Time and Material when you cut straight, smooth edges with a Clipper Concrete Saw before breaking out for patches, trenches or machinery bases. Eliminate radial cracks—stop spalling! Imagine.... Saw up to 12" per minute 1" deep in limestone concrete!

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- CLIPPER "NO BIND" SUSPENSION . . . floating 3 point suspension protects blade
- POSITIVE SCREW FEED . . . instant control for lowering or raising blade from cut
- ADJUSTABLE DEPTH LOCK . . . permits presetting of cutting depth—instantly adjusted
- STREAMLINED BEARING HOUSING . . . permits full depth sawing. Factory greased and sealed

GENUINE CLIPPER DIAMOND BLADES

Whether cutting Limestone, Flint, Gravel aggregate concrete or Asphalt (green or well cured)... there's a Clipper Diamond Blade to cut fast and economically.

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Wittek Roll Feeds handle any type of coiled strip stock and are made in single roll, double roll, and compound types with straighteners, in models to feed in any of four directions. They are reliable and accurate with simple, quick adjustment of feed length. Standard sizes and models meet a wide variety of press size and capacity conditions.

Wittek Reel Stands facilitate handling coiled stock.

Write for full particulars

WITTEK Manufacturing Co.
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Automatic ROLL FEEDS AND REEL STANDS

BREVITY—Identify by IEN - 5200 if you write the maker

PERMACEL
News Graphic
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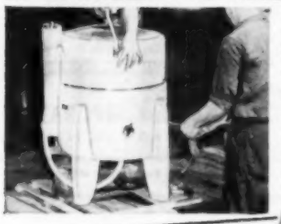

A PROMINENT HOME APPLIANCE MANUFACTURER makes wide and effective uses of PERMACEL Tapes in numerous packaging and shipping operations. Particularly useful is PERMACEL-63 Stain-Resistant Cloth Tape which applies easily, sticks tight, and leaves no residue.

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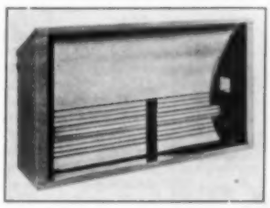
makers of ®TEXCEL Cellophane Tape, and a complete line of pressure-sensitive tapes for industry.

BREVITY—Identify by IEN - 5202 if you write the maker

STERILIZING . . Ultra-violet fixture destroys air-borne germs in a room

Source: ROY C. STOVE & CO.
16-22 N. Washington St., Valparaiso, Ind.



New Air-Tron mounts on a wall or can be recessed into one to direct ultra-violet rays across the upper area of a room without reflecting the rays downward from the ceiling. The rays destroy bacteria in the air without danger of injury to the skin and eyes of the occupants of the area.

Construction includes an Alzak aluminum reflector, ray-directing louvers, the ultra-violet lamp and its end fittings with an extension cord and plug for connection to a 110-volt ac. circuit. Service life for the lamp is rated at 4,000 hr. of continuous duty. Two sizes take 15 and 30-watt lamps to serve in areas measuring 150 and 425 square feet. List prices are $25.50 and $44.50 for the two models.

BREVITY—Identify by IEN - 5203 if you write the maker

PIPE FITTING . . Quick acting coupling, ½ to 6 in. for pressure to 150 pounds

Source: MEAD CORNELL & CO.
P. O. Box 2682-A, Cleveland 7, Ohio

Tapered segments in the end flange on one side of this new coupling ride under tapered hook lugs in the lever-equipped mating section to draw the two parts together against a sealing gasket. The coupling is threaded for standard pipe connection on its two ends.

BREVITY—Identify by IEN - 5204 if you write the maker

TRUCK . . Grip arm attachment handles 4 to 10 in. pieces to 500 lb.

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

Cylindrical work pieces lying on a floor or bench or standing on end are gripped by this new manipulator attachment on the company's fork-lift power truck. Operation is hydraulic to clamp the work and to rotate it through 90 degrees. The lift mechanism on the truck is employed to move the load up and down. The gripping clamp is mounted at the end of a 60-in. arm. Initial design was made to handle artillery shells, forgings and their bar-stock blanks.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 5205 if you write the maker

Specify **BOST-BRONZ** OIL IMPREGNATED **BEARINGS**
With Oil Film ALWAYS Present ALL OVER

for heavy loads, light loads, high speeds, low speeds, static loads and shock loads

Better — interchangeable with solid bronze bearings — actually superior in performance.

Quieter — an oil film to start on and to run on.

Cleaner — no oil drip or waste. No openings for grit, lint or dirt.

Easier to Use—no machining — simple press fits — available in 6 types, wide range of sizes, *from stock.*

More Economical — no oil holes or grooves to machine, and they give longer service.

85 Authorized Bost-Bronz Distributors — One Near You
For sizes, prices, tolerances and load ratings see Boston Gear Catalog No. 55. Write for free copy.

BOSTON GEAR WORKS
63 HAYWARD ST. • QUINCY 71, MASS.

BREVITY—Identify by IEN - 5206 if you write the maker

"THE THING" to remember!

During the emergency it may be difficult—even impossible—to replace worn-out machinery.

THE THING TO DO? Use a CLEMENTS-CADILLAC combination blower-suction cleaning tool regularly to dislodge Dust, Dirt and Grit from every crevice in your machines. They'll run better, longer.

SAVE TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6420 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 5207 if you write the maker

Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

SOMMER METALCRAFT CORPORATION
(Formerly JESCHKE Wire and Specialty Company)
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

BREVITY—Identify by IEN - 5208 if you write the maker

WHEN YOU NEED STEEL CALL RYERSON

Contact Ryerson for prompt shipment of dependable steel products. Because of great demand, all sizes are not always in stock; but you will find that we can usually take care of your requirements.

PRINCIPAL PRODUCTS
Bars • Structurals • Plates • Sheets • Tubing • Allegheny Stainless • Alloy Steel • Safety Floor Plate • Babbitt • Solder Metal Working Tools & Machinery, etc.

JOSEPH T. RYERSON & SON, INC.
Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco

BREVITY—Identify by IEN - 5209 if you write the maker

NEW! DIFFERENT!

TWO NEW VALVES FOR *Effortless* CONTROL OF AIR CYLINDERS!

TYPE NH (above)—A new hand-operated, four-way, directional air control valve. Sizes ½" and ¾". ⅝" lever motion.

TYPE NF (right)—A new foot-operated, four way, directional air control valve. Sizes ½" and ¾". With or without pedal guard.

HERE is the newest thing in air valves for operating single or double acting air cylinders! Built for *hand or foot* operation, these instant-acting valves provide fast, effortless control comparable to an electric valve—*at minimum cost.*

DISC TYPE; SELF-LAPPING—Metal-to-metal seat. Air tight. Packless.

PILOT CONTROLLED; PISTON OPERATED—Only light touch required; air does the work—shifts the main valve.

PRECISION ENGINEERED—Simple, compact, self-contained; rugged! Try one today. *Ask for bulletins.*

HANNIFIN Corporation

1107 S. Kilbourn Avenue • Chicago 24, Illinois

BREVITY—Identify by IEN - 5210 if you write the maker

NEW CONTROL CENTER

is easily expand-able

You're ready for any change in motor control requirements when you centralize your controls in Trumbull's new CENTR-A-POWER.

Standardized starter-and-disconnect units are grouped in prefabricated, front-connected troughs in any arrangement—which may be easily altered to fit changing conditions.

Compact trough design saves floor space. Ample raceways permit ease in wiring. Control units—CENTR-A-PLUGS—are attached by quick-clip device. Air vents in trough and open sides of CENTR-A-PLUGS keep controls uniformly cool.

Write for Bulletin TEC-8.

TRUMBULL (T) ELECTRIC

A GENERAL ELECTRIC ORGANIZATION

Plainville, Conn.

BREVITY—Identify by IEN - 5211 if you write the maker

now . . .

PIN POINT SPEED CONTROL

Now you can get accurate, pin-point variable speed control with wide adjustability of speeds . . . plus good efficiency, high power factor and low maintenance— . . . when you use a Brown Boveri 3-phase variable speed motor. No belts, pulleys, gear boxes or converters are needed. Selected speed is maintained regardless of torque and voltage.

Speed ranges up to 1:50—controlled either manually by push button or automatic devices. ½ hp to 500 hp types including fully enclosed, self-ventilated motors for hazardous operations.

BROWN BOVERI VARIABLE SPEED MOTORS

MAIL COUPON FOR COMPLETE DATA!

Please send me data on your Variable Speed Motors.

Name ..... Title .....

Company .....

Address .....

BROWN BOVERI CORPORATION

19 Rector St. • New York 6, N. Y.

BREVITY—Identify by IEN - 5212 if you write the maker

TRUCK . . Engine driven unit, 1½ ton dump body with sliding gate

Source: KALAMAZOO MFG. CO.
1825-29 Reed St., Kalamazoo 24F, Mich.

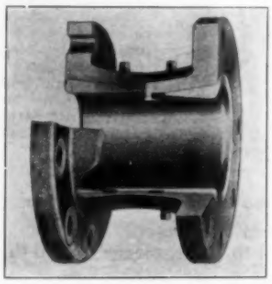
New design of the hinged end gate for the company's engine-driven dump truck, previously described IEN-12242-49, includes a sliding center gate that can be opened and closed to deliver part of a load or to control flow from the body in dumped position. The new design is available on new trucks. It can be applied on trucks now in service.

The truck has a load-carrying capacity of ⅔ yd. and is driven by a 13-hp. air-cooled Wisconsin engine. The transmission provides three speeds forward and one in reverse. Maximum forward speed is 15 mph. Turning radius on the rear-wheel steering mechanism is 79 inches. Dimensions are 85½ by 42 by 42 in. overall for the truck.

BREVITY—Identify by IEN - 5213 if you write the maker

METER . . Gentile patent tube assembles in pipe line to measure flow

Source: FOSTER ENGINEERING CO.
833-37 Lehigh Ave., Union, N. J.



The company announces acquisition of manufacturing and sales rights for the Beth-Flo Gentile patent flow tube, previously described IEN-11516-48. It has renamed the unit Foster Flow Tube and is prepared to supply it in any castable or machinable material and in any size from ¼ to 96 in. in diameter. Assembly is in a pipe line to measure flow, in either direction, of liquid, vapor or gas. List price is $75 to $10,000 depending on size.

Catalog 80, pages FT 101 to 104, illustrates and describes the flow tube with diagram and charts and technical formulae.

BREVITY—Identify by IEN - 5214 if you write the maker

TUBES . . Data card on tolerances for round seamless steel mechanical tubes

Babcock & Wilcox Tube Co.
4027-31 Fourth Ave., Beaver Falls, Pa.

Technical Data Card 115-C lists permissible variations in diameter and wall thickness for round seamless carbon and alloy-steel mechanical tubes. It is for cold-drawn unannealed and finish-annealed tubes to 8⅞ in. o.d. and for hot-finished tubes to 9⅝ in. o.d. A copy will be sent on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5215 if you write the maker

HANSEN

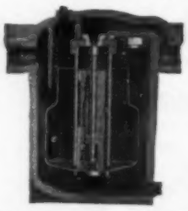
Hardened steel nozzles for long wear. Removes rust, paint, carbon. Prepares metal for soldering and welding. Holds 3 pounds silica sand, works efficiently with 80 to 125 pounds compressed air. Air Blow Gun, which is a detachable part of sand blast cleaner, may be purchased separately, for blowing dust, dirt, etc. Has ¼" hose stem connection. Write for catalog.

Write for catalog showing complete line of one-way shut-off, two-way shut-off and straight-through quick connective couplings—also hose clamps, air spray cleaners, etc.

THE HANSEN MANUFACTURING COMPANY

4011 WEST 150th STREET • CLEVELAND 11, OHIO

BREVITY—Identify by IEN - 5216 if you write the maker



ILLINOIS STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

ILLINOIS ENGINEERING COMPANY
INCORPORATED 1900
RACINE AVENUE AT 21ST STREET • CHICAGO 8

BREVITY—Identify by IEN - 5217 if you write the maker

TACK WITH AIR

use **DUO-FAST AIR TACKERS**

CHAIR COVERING TACKING

TELEVISION WIRE TACKING

TRIGGER-FAST
30 Staples in 10 Seconds

Save time and money on your tacking applications with these speedy air-driven tackers.

Operate on 85 pounds air pressure. Easy to use—flick the trigger and—zip—the tight-holding staple is driven right where you want it.

You can do more tacking work with fewer workmen using Duo-Fast Air Tackers. And girl operators can be used.

30 models including one to save time and money in your plant.

Write today for complete details on Duo-Fast Air Tackers—also information on hand operated Duo-Fast Hammer and Gun Tackers.

FASTENER CORPORATION

862 FLETCHER STREET • CHICAGO 14, ILLINOIS

BREVITY—Identify by IEN - 5218 if you write the maker

NEW and MOST POWERFUL

ROTARY ELECTRIC IMPACTOOL

SIZE 34-U for 1¼" bolts

Weight—32½ lbs.
Height—10⅝"
1" square driver
110-volt AC-DC

— *makes the toughest jobs easy.*
— *sold by leading automotive jobbers and distributors.*

Ingersoll-Rand

11 Broadway, New York 4, N. Y.

823-T8

BREVITY—Identify by IEN - 5219 If you write the maker

the right answer

. . . to every gauge need
IN THIS NEW CATALOG

The right answer—the Marsh answer — to every pressure gauge need is described by this new Marsh catalog which covers hundreds of variations of styles, types, mountings, ranges, functions. Remember that Marsh gauges, from the "Standard" series line to the heavy-duty "Mastergauge" series have proved across the years to be the most economical you can buy for a given set of conditions. Let us prove this in terms of gauges for your product.

MARSH INSTRUMENT CO.
Sales affiliate of
Jos. P. Marsh Corp., Dept. A, Skokie, Ill.

BREVITY—Identify by IEN - 5220 If you write the maker

NEW! FREQUENCY AND TIME MEASUREMENTS ACCURATELY . . . CONVENIENTLY

using $f \frac{n}{t}$

ANY FACTOR MAY BE MEASURED FOR FIXED VALUE OF THE OTHER

Model 801 Universal 6-in-One MEGACYCLE FREQUENCY-TIME COUNTER

by *Potter*

Now, the Potter Instrument Company offers all in one equipment, the features heretofore available only in separate counting systems. Two complete counting channels, a 100 kc crystal oscillator time base and unique gating circuits are combined to provide the new FREQUENCY-TIME COUNTER.

FREQUENCY MEASUREMENTS	0 to 1 mc range by counting cycles per pre-selected time or by measuring time per pre-selected count. Accuracy 0.001% minimum.
TIME INTERVAL MEASUREMENTS	0 to 10 seconds ± 10 micro-seconds.
FREQUENCY RATIO MEASUREMENTS	Ratio of two external frequencies can be measured.
SECONDARY FREQUENCY STANDARD	100 kc crystal oscillator with divided frequencies available at 10, 1 kc and 100, 10, 1 cps.
TOTALIZING COUNTER	Six decades, pulses 0 to 1 mc, sine wave 10 cps to 1 mc.
DIRECT RPM READING TACHOMETER	Through the use of an external 60 count per revolution photoelectric disc generator an accuracy of ± 1 rpm is obtained.

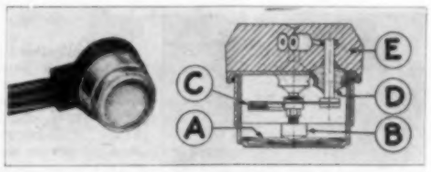
Please address inquiries to Dept. 7T

POTTER INSTRUMENT COMPANY • INC.
113 CUTTER MILL RD., GREAT NECK, N. Y.

BREVITY—Identify by IEN - 5222 If you write the maker

THERMOSTAT . . Sealed assembly for surface use, 10 amp., 110 volt ac.

Source: SPENCER THERMOSTAT DIVISION
110-14 Forest St., Attleboro, Mass.



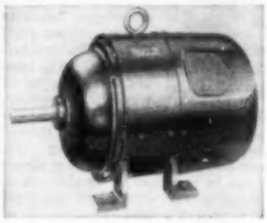
Original design of this new Type C-4391 thermostat was for an electric defrost control in which the thermostat is mounted directly on a refrigerator evaporator and changes in temperature are transmitted through its sealed enclosure to the disc-type element. The assembly is now offered for any surface application over a temperature range both above and below zero with any required differential of 15 deg. F. or more between opening and closing.

The disc element A mounts against the contacting face of the solder-sealed metal enclosure so temperature can be transmitted through the metal to the disc when the unit is in its mounted position. Movement of the disc is against a ceramic indicator B which operates the contact assembly C. Terminals are carried out through fused-glass insulation D to the molded rubber cover E containing the electrical leads. The disc provides snap action. The contacts can be specified as single or double-throw, single-pole. Interior of the sealed assembly is filled with helium or other inert gas when specified. Overall dimensions are about 1¼ in. in diameter by 1⅛ in. in height.

BREVITY—Identify by IEN - 5223 If you write the maker

MOTOR . . Explosion proof dc., ½ to 20 hp., 230 to 550 volts

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.



New motor is totally enclosed to withstand an internal explosion and to be proof against igniting an explosive mixture on the outside. It has been added to the company's Life-Line motors for mining service. It is available in ½ to 20-hp. ratings in frames No. 203 to No. 365. It is designed for temperature rise to 55 deg. C. and is available in series, shunt or compound winding for speeds between 850 and 3,500 rpm.

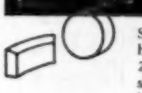
The motor is steel construction with a one-piece rolled-steel frame. Its rotor is mounted on pre-lubricated, double-sealed ball bearings designed to operate without attention for the life of the bearings. Steel and armature windings are impregnated in thermoset varnish. The power cable is brought out through packing glands. Rotating flame seals are included at each bearing. Screw-type brass access covers provide explosion-proof construction. Captured joints are employed between the frame and brackets. The motor can be specified in non-ventilated or fan-cooled assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5224 If you write the maker

CAST SPECIAL SHAPES QUICKLY . . . EASILY

. . . *with these* **FIRECRETE**
Castable Refractories



Special shapes or linings of Firecrete air-harden and are ready for service within 24 hours. Other advantages—no drying shrinkage, negligible firing shrinkage, high resistance to spalling, can be used in combination.

3X Firecrete—Effectively withstands soaking temperature to a full 3000 F. Provides savings through longer life and reduced shutdowns.

H-T Firecrete—A high heat-duty refractory made from an exceptionally heat-resistant base. For service between 2400 F. and 2800 F.

Standard Firecrete—The most generally applicable type of Firecrete—for use to 2400 F. Permits casting shapes or linings as thin as 1½".

L-W Firecrete—A lightweight insulating refractory concrete for use to 2400 F. Has low conductivity, low heat storage capacity and high resistance to spalling.

For patching and gunning, use 3X BLAZECRETE. Has occasional adherence qualities, can be flipped into place with a trowel without ramming or tamping. For use to 3000 F. For further information, write to Johns-Manville, Box 290, New York 16, N. Y.

JM

Johns-Manville. FIRECRETE
"The Standard in Castables"

BREVITY—Identify by IEN - 5225 If you write the maker

FASTER . . . EASIER

PRECISION DEW POINT INDICATOR

★ The Alnor is the only dew point indicator that is a complete unit in itself . . . It is readily portable and does not require external coolants or auxiliary apparatus.

★ Controlled testing conditions are assured. Indications take place in an enclosed chamber . . . dew or fog is observed suspended in air—not on a polished surface. This means greater accuracy, faster reading—every time.

★ Simple, direct operation of the Alnor Dewpointer assures laboratory accuracy by non-technical personnel. Substantial carrying case protects it against the usual hazards of portable use.

★ Available in three ranges—for dew points between minus 20 deg. F. and room temperatures, from minus 80 deg. F. to 0 deg. F., and from —80 deg. F. to room temperature.

Write for Descriptive Bulletin. Illinois Testing Laboratories, Room 317, 420 N. LaSalle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 5226 If you write the maker

the No.1 money saver for your plant

DEWALT

gives you more work for your money in:

- *PLANT MAINTENANCE*
- *PATTERN SHOPS*
- *CRATING AND BOXING*

This versatile, all-purpose DeWalt is never idle! In *your* plant, it can take care of all your woodworking needs—quickly, accurately and safely. It is *many* machines in one! Simply by changing the cutting tool, you have another machine! Write for catalog. DeWalt, Inc., Dept. IE-5, Fountain Ave., Lancaster, Penna.

DEWALT A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 5227 If you write the maker

The Answer is often: USE

SHAF-TITE* ROLLS

Many Patented Constructions

Choice of

METAL, RUBBER, or WOOD ROLLS

Send For NEW ROLL CATALOG No. 48

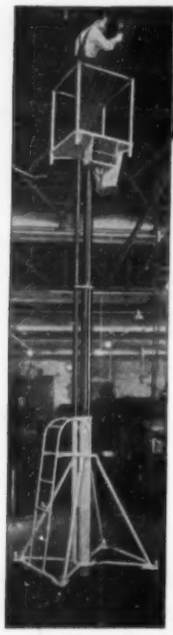
INDUSTRIAL ROLL DIVISION

RODNEY HUNT MACHINE CO.

873 Main Street — RODNEY HUNT — Orange, Mass., U. S. A.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 5228 if you write the maker



Electro-Hydraulic

WORK TOWER

RAPIDLY ELEVATED BY PRESSING PUSH BUTTON

Needs No Connection to Electric Outlet

The new Safway "Moto-Lift" maintenance tower spends work at heights to 22-23 ft. Raising and lowering are controlled from the platform by pressing a push button or foot lever. Here's how it operates:

- Platform may be raised to as high as 17 ft. in 25 seconds on hydraulic ram.
- Standard 6 volt storage battery operates hydraulic pump.
- Tower can be raised and lowered 46 times per day on one charge—battery may be recharged overnight.
- Unit easily rolled anywhere on rubber-tired, swiveling casters with safety brakes.
- Broad, stable base is 4 ft. 3 in. square.
- Tower telescopes to pass through doors 7 ft. high by 30 inches wide.

Write for Free Bulletin IEN-551

DISTRIBUTORS IN PRINCIPAL CITIES

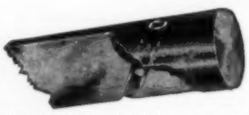
SAFWAY STEEL PRODUCTS, INC.
6228 West State Street
MILWAUKEE 13, WISCONSIN

BREVITY—Identify by IEN - 5229 if you write the maker

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!

Patents Pending

One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The Sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the Sleeve. The Sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.



The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

BUSHINGS MADE IN FOLLOWING SIZES:
$\frac{3}{16}$, ¼, $\frac{5}{16}$, ⅜, $\frac{7}{16}$, ½, ⅝, ¾, 1"

Write for Literature

STURDY BROACHING SERVICE
23516 TELEGRAPH ROAD, DETROIT 19, MICH.

BREVITY—Identify by IEN - 5230 if you write the maker

High tiering eight palletized rolls

250% Gain in Storage, using ELWELL-PARKER Trucks

At a prominent textile finishing plant, Elwell-Parkers high stack 54 palletized rolls of cloth in the space previously occupied by 15.

Carloading Time Cut from 28 to 1½ Man-Hours—At this same plant, it formerly took 3½ hours for 8 men with hand trucks to load a boxcar. Now, the E-P truck operator with one helper does job in 40 minutes—*only 5% of previous man-hours!*

To learn about the savings in man power and storage space being made by Elwell-Parker trucks in over 300 different industries, send for:—

***FREE BOOKLET** on Scientific Materials Handling. Ask for a copy of "Industrial Logistics".*

THE ELWELL-PARKER ELECTRIC COMPANY
4061 St. Clair Avenue • Cleveland 3, Ohio

BREVITY—Identify by IEN - 5231 if you write the maker

PHOTOGRAPHING . . Land camera and accessory equipment to photocopy

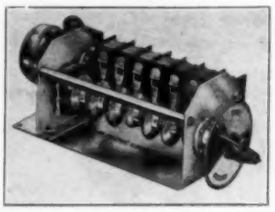
Source: POLAROID CORP.
207-11 Massachusetts Ave., Cambridge 39, Mass.

New application for the company's Land camera which exposes and develops 3¼ by 4¼-in. photographs in one-minute intervals can be employed to make photocopies of letters, sketches, drawings, photographs, prints, machine parts or other objects in maximum dimensions at 11 by 14 inches. The material to be pictured is positioned on a movable support beneath a head enclosing a circular fluorescent light source. A Polaroid filter in the camera window and another covering the light source eliminate shine or reflection from glossy surfaces. A timer built into the side of the housing signals correct exposure interval for camera operation.

BREVITY—Identify by IEN - 5232 if you write the maker

TIMING . . Multiple circuit assembly, motor driven for automatic sequence

Source: ZENITH ELECTRIC CO.
154 W. Walton St., Chicago 10, Ill.



Multi-Circuit designates new interval timing equipment in which a bank of single-pole double-throw Micro switches is mounted in line with a cam-equipped shaft driven by a synchronous motor. The cams are adjustable for intervals of variable duration. As many switches and cams as may be required can be assembled. Nominal switch rating is 20 amp. on 110-volt ac., but this also is subject to specification.

Two-circuit assembly lists at $24. Each additional circuit adds $7. The equipment can be provided for single-cycle or repeat operation. It is available also without the motor for connection to a drive source within a machine.

BREVITY—Identify by IEN - 5233 if you write the maker

TAPES . . How to use them for strapping, sealing, masking in house paper

Industrial Tape Corp.
Highway No. 1, New Brunswick, N. J.

"Industrial Review", company's house publication, is issued bimonthly to acquaint you with developments in Permacel and Texcel adhesive tapes and their uses. Typical are in making unit car loads for shipping, masking in truck manufacture. Your name will be added to the list on request.

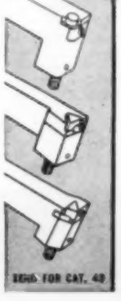
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5234 if you write the maker

This KENNAMATIC TOOL has 8 long-lasting KENNAMETAL Cutting Edges!

CLAMPED-IN INDEXABLE KENNAMETAL INSERT

SEVERAL STYLES AVAILABLE



- *Insert can be indexed, turned end-over-end, or changed without adjusting tool holder setting.*
- *Resharpening merely requires squaring off both ends of insert.*
- *Shank can be used indefinitely —insert is replaceable.*

This tool is thermal-strain-free. Its Kennametal insert can be sharpened scores of times and advanced to cutting position by means of back-up screw.

Now being used with outstanding results, in hundreds of shops, for machining steel, cast-iron, and non-ferrous materials.

SEND FOR CAT. 42

KENNAMETAL Inc.
Latrobe, Pa.
MANUFACTURERS OF SUPERIOR CEMENTED CARBIDES AND CUTTING TOOLS THAT INCREASE PRODUCTIVITY

BREVITY—Identify by IEN - 5235 if you write the maker

HIGH PRESSURE HYDRAULIC PRINCIPLE

found in World's Fastest **JET PLANES** used exclusively in **AUTOMATIC ELECTRIC TRUCKS**

Dependable basic principles of HIGH PRESSURE HYDRAULICS FOUND IN the World's Fastest Jet Planes are used exclusively in LIFTING and TILTING mechanism of AUTOMATIC ELECTRIC TRUCKS.

A 2,000 pound per square inch hydraulic system requires only one-half the area for working parts as compared with low pressure 1,000 pound per square inch system.

Thus, AUTOMATIC gives you a *smaller, more compact*, electric truck that lifts and tilts *smoothly* and *effortlessly*. Forks and uprights remain in any position indefinitely *without drifting*, and you get increased visibility with greater safety for operator.

Automatic's exclusive TWIN LIFT RAMS permit maximum free lift before increasing overall height of truck. First lift ram elevates forks and second lift ram elevates telescopic upright section. Forks reach a maximum initial lift before telescopic section extends, permitting tiering in box cars, trucks and low clearance areas. Write for complete facts.

AUTOMATIC TRANSPORTATION CO.
DIV. OF THE YALE & TOWNE MFG. CO.
109 W. 87th Street, Dept. E-1
Chicago 20, Ill.

Automatic ELECTRIC TRUCKS

another **EXCLUSIVE**.. *another* **FIRST**.. *pioneered by* **AUTOMATIC**

BREVITY—Identify by IEN - 5236 if you write the maker

WASHERS

FLAT AND LOCK WASHERS TO MEET ARMED FORCES SPECIFICATIONS

Let Garrett fill your contract needs for all types of washers. We manufacture a complete line of high quality washers to meet the most exacting specifications of the Army, Navy and Air Force. Whether in regular steel, stainless steel, spring steel, brass, bronze, monel metal, aluminum, Alclad, copper or other metals specified we can supply them all. Our modern plating facilities offer you washers plated with zinc, cadmium, nickel, brass, chrome . . . or parkerised. Get what you want when you want them. Order washers from Garrett. Here are a few of the many product-proved washers in the line:

AN 936	AN 961	NAS 143	BEC X 3.1	BEB X 2
AN 940	AN 970	NAS 143C	BEC X 4	BEB X 3
AN 945	AN 975	BEC X 1	BEC X 1	BEB X 8
AN 950	AN 8013	BEC X 2	BEB X 1	BED X 1
AN 955	NAS 70	BEC X 3	BEB X 1.1	SC 104-1
AN 960		AN 122576 thru 122600		

Write for new folder of specifications for Armed Forces Washers

GARRETT OF ELLWOOD CITY — GARRETT OF PHILADELPHIA

GEORGE K. GARRETT COMPANY, INC. • PHILADELPHIA 34, PA.
MANUFACTURERS OF
STAMPINGS • LOCK WASHERS • FLAT WASHERS • SPRINGS • WIRE FORMS

BREVITY—Identify by IEN - 5237 if you write the maker

WARRICK

SIMPLE
RELIABLE
ACCURATE
FLOATLESS

LIQUID LEVEL CONTROLS

ELECTRODE TYPE

HIGH & LOW LEVEL ALARMS
HIGH & LOW LEVEL CUTOFFS
MULTI-LEVEL SIGNALS
PUMP CONTROLS
DUPLEX & MULTIPLE PUMP ALTERNATORS
LIQUID METERING
CONDENSATE CONTAMINATION DETECTION
SPECIAL CONTROLS & PANELS

WRITE FOR CATALOGUE

CHARLES F. WARRICK CO.,
18254 HAMILTON AV., DETROIT 3, MICH.

BREVITY—Identify by IEN - 5238 if you write the maker

Engelhard meets every THERMOCOUPLE NEED!

NOBLE METAL THERMOELEMENTS AND THIMBLES

platinum vs. platinum-rhodium—repaired at substantial savings, with credit for reclaimed metal.

BASE METAL THERMOELEMENTS

chromel vs. alumel iron vs constantan copper vs. constantan.

STANDARD INSULATORS

All types and sizes.

PRIMARY AND SECONDARY PROTECTION TUBES

TERMINAL HEADS AND LEAD WIRE, ETC.

At Engelhard, you will find a complete line of thermocouples and accessories to meet all requirements. The individual parts of Engelhard thermocouples are selected and assembled for your specific conditions of atmosphere and temperature. You can rely on Engelhard's more than 40 years of research and instrument-building experience to solve your temperature measurement problems. Write for complete information today.

CHARLES ENGELHARD, INC.

850 PASSAIC AVE., EAST NEWARK, N. J.

BREVITY—Identify by IEN - 5239 if you write the maker

TRY JUST ONE

• We're so sure you will like ACCO *Registered* WIRE ROPE SLINGS that we ask you to try just one. Put it in service with a sling you now use. Compare it in every way. You'll find it is stronger, lighter in weight, easier to handle, safer to use—and—cheaper in the long run.

• Proof-tested, registered, and warranted to satisfy. You can't lose if you use ACCO *Registered* STRAND-LAID and CABLE-LAID WIRE ROPE SLINGS. See your local distributor today or write us for further information.

*Trade Mark Registered

MEMBER THE NATIONAL SAFETY COUNCIL

Wilkes-Barre, Pa., Chicago, Denver, Houston, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

ACCO

AMERICAN CHAIN & CABLE
WIRE ROPE SLING DEPARTMENT

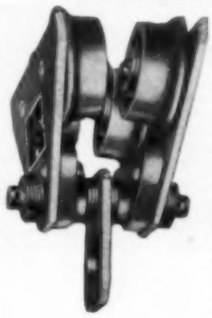
In Business for Your Safety

Made by the Originators of Preformed WIRE ROPE

BREVITY—Identify by IEN - 5241 if you write the maker

MONORAIL . . I-beam trolley, ½ to 3 ton, roller bearing design

Source: AMERICAN CHAIN & CABLE CO.
927-31 Connecticut Ave., Bridgeport 2, Conn.



Chilled-tread wheels are mounted on roller bearings on steel axles secured in fabricated steel side plates in construction of this new Wright-Way trolley. It is available in five sizes with load capacity at ½ to 3 ton. The smallest is adjustable to apply on I-beams measuring 4 to 8 inches. The largest will fit an 8 to 15-in. beam. Weights are 25 to 100 pounds. Minimum curve radius is 20 to 36 inches. List price is $20 to $65.

BREVITY—Identify by IEN - 5242 if you write the maker

FILING . . Clamp-on holder presents handle for secure grip

Source: REMONT MFG. CO.
1001 13th St., Lombard, Ill.

Over-Tang is a new assembly of wood handle reinforced with a steel shaft and a steel V-block grip that wedges in place on a hand-file tang. The unit is made in three sizes for 14-in. heavy files, 12-in. heavy files and for 12 and 14-in. mill files. It lists at about $20 per dozen.

BREVITY—Identify by IEN - 5243 if you write the maker

BORING . . Adjustable head, 5 sizes, ½ to 1½ in. bar capacity

Source: FLYNN MFG. CO.
131-35 Flowerdale Road, Ferndale, Mich.

Series 40 designates five new models that have been added to the company's line of adjustable boring heads to bring the total in the line to sixteen. Smallest of the new units, Model 43, measures 2¾ in. in diameter and takes a ½-in. bar. It weighs 3 pounds. The largest, Model 49, is 6½ in. in diameter. It takes a 1½-in. bar and weighs 24 pounds. Offset adjustment, by turning a micrometer dial at the side of the body, provides for ⅝ in. of movement in the smallest unit, 1½ in. in the largest.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5244 if you write the maker

Investigate

MULTI-SWAGE

• If it's VOLUME you need on small tubular metal parts similar to these, be sure to look into Bead Chain's MULTI-SWAGE Process. Many prominent users of solid pins for electronic and mechanical purposes have cut costs by switching to Multi-Swaged *tubular* pins . . . without sacrificing strength or accuracy. Multi-Swage Parts serve in a wide variety of electronic and mechanical products. Send part (up to ¾" dia. and to 1½" length) and your specs for a quotation. Or write for DATA BULLETIN.

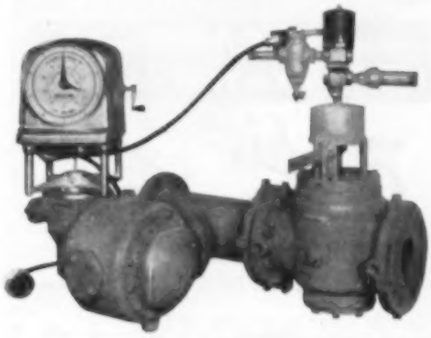
The BEAD CHAIN Mfg. Co.

TRADE MARK

59 Mountain Grove St., Bridgeport 5, Conn.

Manufacturers of BEAD CHAIN—the kinless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products.

BREVITY—Identify by IEN - 5245 if you write the maker



AUTOMATIC VALVES *for hard-to-reach places*

Automatically operated jacketed valves, which have long been used with H & B Fluidometer metering systems, are now available for use where remote control is required without automatic batching features. See typical application above.

Valves of either straight, 3-way plug cock, or straight globe type are available for steam, air or hydraulic operation. These valves provide the solution to many problems of actuating valves in hard-to-reach places.

Write for Bulletin FI-49.

HETHERINGTON & BERNER INC.
725 Kentucky Ave. Indianapolis 7, Ind.

BREVITY—Identify by IEN - 5246 if you write the maker

It's a new version of the unique Kodak Contour Projector, stripped of toolroom features for greater flexibility in getting out production on all sorts of precision jobs, small or large.

1. At any magnification up to 100× you get the same 8 inches of free space from lens to object. This makes it easy to design fixtures that handle parts fast.
2. The projector body (with all optical parts dust-sealed in because they never need adjustment), the work stage, and the front lamp house all come apart. You can attach them in any combination to a big fixture for holding heavy parts.
3. There's an accessory for vertical projection if that's better for your work than horizontal.
4. There's another accessory for examining surface detail and deep recesses by light coming right out of the lens that picks up the image.
5. The 14-inch screen is so uniformly bright that no hoods, curtains, or darkened rooms are required.

We'll be glad to arrange a demonstration on your own special problems. Write Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR, model 3

Distributed by ENGINEERS SPECIALTIES, Buffalo 9, N. Y.
*List price, F. O. B. Rochester, N. Y., lenses and accessories extra, price subject to change without notice.

BREVITY—Identify by IEN - 5248 If you write the maker

reduce WEAR, NOISE and VIBRATION in YOUR products...

with Quadriga® CUSTOM—FABRICATED

SPECIAL WASHERS and STAMPINGS

Quadriga washers and stampings are made to your *precise* specifications — to fit your particular needs. We'll quickly supply you with any quantity of flat washers; tension, spring, formed, drawn, cupped or finishing washers of any washer material. Also, stampings of any material in any design. Press capacity to 150 tons, depth of draw to 4". We build dies. Send B/P, samples, or data today for a prompt estimate.

Write now for free technical catalog with valuable washer and stamping information.

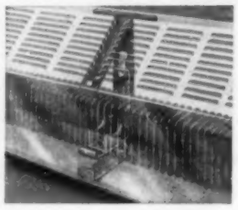
THE QUADRIGA MANUFACTURING CO.
215-A West Grand Avenue Chicago 10, Illinois

BREVITY—Identify by IEN - 5249 If you write the maker

VULCAN STANDARD RADIATION

EASIER TO INSTALL

STURDY STEEL BRACKET



Rugged support for both radiation and cover. Only two bolts per bracket for rugged dependable wall hanging. Full length slot for easiest adjustment of slide cradle hanger for proper pitch.

SLIDE CRADLE HANGERS

Sturdy, easily adjusted. Allows for normal expansion of long runs of Vulcan Radiation without any strain on wall fastenings.

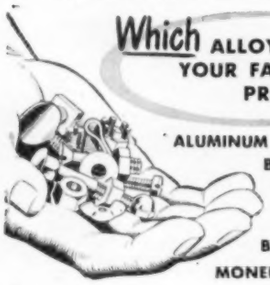
SUPPORT BRACKET AND RADIATION HANGERS PRE-ASSEMBLED AT FACTORY

For full details on Vulcan Standard Radiation for factories, schools, hospitals, public buildings — send for illustrated catalog.

THE VULCAN RADIATOR CO.
26 FRANCIS AVE. HARTFORD 6, CONN.

BREVITY—Identify by IEN - 5250 If you write the maker

Which ALLOY MEETS YOUR FASTENING PROBLEMS?



ALUMINUM
BRONZE
COPPER
STAINLESS
BRASS
MONEL

Let HARPER Help. Here are *all* kinds—with exactly the right alloy, size, type and finish you need. Harper specializes in nonferrous and stainless steel fastenings for services in all industries where resistance to corrosion, abrasion, heat and stress is vital. Over 7000 items—bolts, screws, nuts, rivets, and accessories—in stock ready for immediate delivery from warehouses and distributors, coast to coast. For latest catalog, mail coupon.

HARPER
EVERLASTING FASTENINGS

The H. M. Harper Co.,
8211 Lehigh Ave., Morton Grove, Ill.
Rush my copy of the Harper Catalog.
(Please Print)
Name .....
Address .....
City ..... State .....

SPECIALISTS IN ALL NON-CORROSIVE METALS

BREVITY—Identify by IEN - 5251 If you write the maker

RECORDING . . Strip chart instrument traces six temperature records on chart

Source: WHEELCO INSTRUMENTS CO.
845-9 W. Harrison St., Chicago 7, Ill.

Sensing units such as thermocouples, radiation detectors, to produce electric signals, serve as the actuating elements for this new strip-chart recorder in the company's Capaciog line of recording instruments. The record is printed on the chart as a series of dots with identifying numbers for each of the six indications.

The instrument is compensated for ambient and for cold-junction temperature changes. Interchangeable compensator inserts permit the use of any external leadwire length without need for special recalibration. The pointer in the measuring mechanism is free to follow changes of the measured variable. This pointer carries a small aluminum vane between two sensing coils through which an oscillating current flows to provide the actuating indication for first one point and then the next. Assemblies for two and three-point recording are included in the line.

BREVITY—Identify by IEN - 5252 If you write the maker

SWITCH . . Foot operated design has rating of 5 amp. on 110 volt ac.

Source: SIMONDS MACHINE CO.
50 Saxon Road, Southbridge, Mass.

Two designs in this new foot-operated Treadlite switch are assembled in formed-steel housings that measure 3½ by 2⅝ by 1 in. and are equipped with rubber-covered non-skid tread tops. One design, known as Model T-51-S, is a single-pole double-throw momentary-contact switch that can be wired normally opened or normally closed. The other, Model T-52-S, employs one contact for actuation to open or close a circuit on partial downward movement of the treadle and a second contact which also opens or closes on final treadle movement. Both of the switch contacts in this assembly are single-pole double-throw. List prices are $2.95 and $4.20 without an extension cord.

BREVITY—Identify by IEN - 5253 If you write the maker

MANPOWER . . Personnel records and forms the subject of new 228-page manual by the AMA

American Management Association
330 W. 42nd St., New York 18, N. Y.

Research Report 16 devotes over 150 of its 228 pages to reproductions of personnel records and forms currently in use by representative companies. The book, list price $3.50, covers topics such as job application, interviews, patent right, attendance, training, rating, grievance, suggestions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5254 If you write the maker

step up production with

Stow STREAMLINER N-40

STOW flexible shaft MACHINES

3-SPEED JIFFY SJ-38

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY for your free copy of CATALOG 50

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

BREVITY—Identify by IEN - 5255 If you write the maker

DARNELL CASTERS

SPEED PRODUCTION

DARNELL CORP. LTD.
LONG BEACH 4, CALIFORNIA
60 WALKER ST., NEW YORK 13, N. Y.
36 N. CLINTON, CHICAGO 6, ILL.

BREVITY—Identify by IEN - 5256 If you write the maker

It's All NEW! The CLARK "CY" AC Motor Starter

with the sensational NEW multi-turn magnetic blowouts—

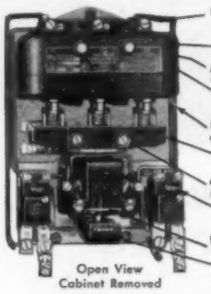
and TWIN-BREAK CONTACTS!

Another CLARK FIRST!

Here, for the first time is a rugged AC magnetic starter that provides the extra protection and dependable operation of "Mill-type" heavy-duty construction and design at no *premium* above *ordinary starter prices!*

Phantom view showing Arc-shield

CLARK "CY" STARTERS employ an entirely new principle of arc interruption. The arc is extinguished by the effect of the blow-out coil, *concentric with the contact*. The magnetic field quenches the arc either by lengthening or confining it. In its *forced rotation* it moves continually from a hot to a cold spot—preventing burning or pitting of contacts. The arc chamber's ingenious design prevents carbonization and accumulation of ionized gases between wiring terminals—minimizing phase-to-phase failures.*



- No filing, dressing or cleaning of contacts!
- No tools necessary to inspect contacts!
- Easy to change moving contacts!
- Stationary contacts changed quickly with screw driver!
- Only two screws and one pin to remove to change coils!
- Only four screws to remove to take out stationary magnet frame!
- Power circuit contacts available with springs in complete packaged service kits for ease in stocking!

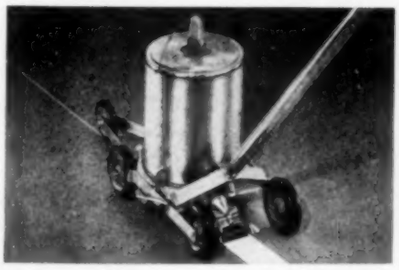
*Magnetic blow-out coils are used on all size 2 and 3 "CY" starters. Sizes 0 and 1 use the same general Mill-type construction as the larger sizes.

Let a CLARK application engineer show you what this new line of CLARK "CY" starters means to you in increased production and lower maintenance.

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL — 1742 EAST 152ND STREET, CLEVELAND 10, OHIO

BREVITY—Identify by IEN - 5258 if you write the maker

MARK-A-ZONE
Stripes Like Magic



Starts and stops painting instantly. Practical for all uses, makes up to 3⅜ stripes. Gravity feed, no brush to clean. No dust or drip. Easy to operate. Quality and performance guaranteed by our eighteen years experience in manufacturing striping devices.

Inquire through your local supplier, or write direct.

S. B. BEUGLER, 3667 Tracy St., Los Angeles 39, Calif.

BREVITY—Identify by IEN - 5259 if you write the maker

Have Them Reclaimed By Our Startling NEW METHOD

SAVE UP TO 50% ON YOUR BRUSH MAINTENANCE COST. . . . The critical condition of bristles due to our relations with China has compelled our Government to curtail the use of this commodity. . . . As you perhaps know, the manufacture of pure Chinese bristle brushes is prohibited, and many thousands of brushes that would ordinarily be discarded can now be reclaimed by our new brush reclamation process, and in many cases the brushes can be returned to you (from the painter's viewpoint) in a better condition than the new mixed bristle brushes being offered by the manufacturers today.

May we have the opportunity to prove the above? Write today for further details. The low cost will amaze you. No quantity is too large or too small.

← This brush was doomed to the scrap heap

← Here's the same brush after our reclaiming process

TAIT PAINT SERVICE
3868 W. Jefferson Ave., Ecorse 29, Mich.

BREVITY—Identify by IEN - 5261 if you write the maker

VALVE . . Gate, globe and check, flared fittings for stainless tube

Source: WILLIAM POWELL CO.
2505-29 Spring Grove Ave., Cincinnati 22, Ohio

New combination of the company's stainless-steel globe, gate and check valves, in sizes from ¼ to 1 in., include Koncentrik stainless-steel flared tube fittings manufactured by Special Screw Products Company. These fittings can be supplied by the company, threaded or welded into place, or as separate units for field assembly by the user.

Each fitting includes an internal threaded body part, a wedge-type double face internal member fitted with Teflon rings and an externally-threaded nut. Construction is standard in Type-316 stainless steel. No. 20 Carpenter stainless steel can be specified if required.

BREVITY—Identify by IEN - 5262 if you write the maker

LIGHTING . . Incandescent fixture mounts on wall for outdoor installation

Source: HOLOPHANE CO.
342 Madison Ave., Room 719, New York 17, N. Y.

Lens not lamp is double wall

We should have said "lens," not "lamp," to start the second paragraph of our description, IEN-3784-51, of the company's new outdoor incandescent lighting fixture. It is the double-wall lens that is made of heat-resisting glass with interior prismatic reflecting surfaces. The lamp that applies back of the lens is a standard unit as stated in the first paragraph.

BREVITY—Identify by IEN - 5263 if you write the maker

COMMUNICATING . . Sound recorder impresses dictation on plastic belt

Source: DICTAPHONE CORPORATION
207 Graybar Bldg., New York 17, N. Y.

Magnesium is employed in the housing, base plate and certain of the internal parts in this new design of the company's Time-Master dictating machine. Weight of the new assembly is about 16 pounds. In addition the company has developed a new control-center hand microphone that mounts a switch for control of dictation and playback and a tilting head for adjustable voice pickup. The current design of plastic recording belt is made of extruded plastic without seams and lists at 5 cents.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 5264 if you write the maker
A Paid News Advertisement by Kollmann Mfg. Co.

CLEANS DRAIN AND SUPPLY LINES

. . . Advanced design machine features instant-acting clutch and sectional cables for fast, SAFE operation by one man. Cuts maintenance costs and "down" time.

This fully portable, electric power machine is ideal for clearing obstructions from underground or overhead drains and supply lines. Adaptable to 4 cable sizes and to all pipe sizes from 1¼" to 12". Handles up to 200' of cable at 700 R.P.M. **under instant control.**

Convenient 15' sections of tempered steel cable, couple and lock instantly and are enclosed by guide hose. There is no unwieldy cable length to damage operating area or injure operator.

Patented instant-acting clutch provides finger tip control for starting, stopping and reversing. Cutters and cables clear any combinations of traps, ells and bends in sewer or industrial drains, conductor lines, concealed or exposed downspouts and supply lines. Easily carried and operated by one man, machine can be passed through an opening 14 by 22 inches and needs only 3 sq. ft. of floor space. Quickly pays for itself through reduced maintenance costs and less out-of-service time. For full details and name of nearest distributor, write Kollmann Manufacturing Company, 4850 Peach St., Erie, Pa., or use the enclosed Reader Service Form.

KOLLMAN MANUFACTURING CO.
4850 Peach Street, Erie, Pa.

BREVITY—Identify by IEN - 5265 if you write the maker

your Royal dealer could give you 'One-month' delivery...maybe!

Why does it take so long to get delivery on Royal furniture? Here are four very good reasons...

1. Government purchasing demands have increased.
2. Material shortages and restrictions have developed.
3. D.O. orders take priority over non-defense production.
4. The overwhelming increase in Royal's popularity on today's consumer market!

If you can wait...you'll be wise to wait for Royal!

Royal
METAL FURNITURE SINCE '97

ROYAL METAL MANUFACTURING COMPANY
175 NORTH MICHIGAN AVENUE · CHICAGO 1
New York · Los Angeles · Michigan City, Ind. · Warren, Pa. · Preston and Galt, Ontario

BREVITY—Identify by IEN - 5266 if you write the maker

For Hinges, Stampings and Deep Drawings by the 100 or 100,000 call on Stanley!

Complete Stanley facilities for stampings and special hinges are at your service whether you order in lots of a hundred—or a hundred thousand. Get the economy, efficiency, of turning all your requirements from first sketches to finished product over to one reliable source—Stanley! Write now to:

Pressed Metal Division,
The Stanley Works,
New Britain, Connecticut.

6 Reasons Why Stanley is Geared To Give You Better Service:—

1. Comprehensive Engineering Service
2. Stanley-Owned Steel Mills
3. Testing and Research Laboratories
4. Complete Tool-Making Facilities
5. Quantity or Limited Production
6. Plating, Anti-Rust and Colored Finishes

STANLEY
Reg. U.S. Pat. Off.

New York • Detroit • Los Angeles
Chicago • San Francisco • Seattle

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 5267 if you write the maker

ARO GRINDERS for Modern Metal Alloys!

HIGH SPEED...with SAFETY!

ARO
AIR TOOLS
Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

ARO's famous Turbine Grinder Model 7335 with Erickson precision collets . . . greater gripping power for *greater safety* at high grinding speeds. 1/64" to 1/4" sizes. Excellent for carbide burr work and small mounted points. Write for catalog.

The Aro Equipment Corporation, Bryan, Ohio
Aro Equipment of Canada, Ltd., Toronto

BREVITY—Identify by IEN - 5268 if you write the maker

Whether you grind soft or hard materials, there is a Sturtevant Grinder or Crusher exactly suited to your requirements.

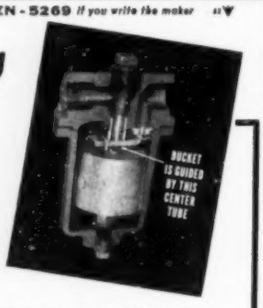
Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

Look into Sturtevant Grinders and Crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write today.

Sturtevant Mill Company
113 Clayton Street, Boston 22, Mass.

BREVITY—Identify by IEN - 5269 if you write the maker

Free Swinging Buckets CAUSE TRAP TROUBLE



● Steam traps with free swinging buckets cause trouble sooner or later. Uncontrolled bucket action inevitably causes bucket damage and leads to high replacement costs. SUPER-SILVERTOP Steam Trap is the only steam trap with a patented *guided bucket*. A guided tube positively controls the bucket, eliminating the possibility of bucket swing. This is just one of the reasons why many manufacturers are changing their entire steam trap systems over to SUPER-SILVERTOPS. It will pay you to do the same. Talk it over with your nearest SUPER-SILVERTOP representative or write us direct.

THE V. D. ANDERSON COMPANY
1931 West 96th Street • Cleveland 2, Ohio

SUPER-SILVERTOP STEAM TRAPS

BREVITY—Identify by IEN - 5270 if you write the maker

Naylor's fabrication service provides a dependable source for fittings, manifolds, piping and other equipment to meet your precision requirements. Made in carbon steel, stainless steel (Nos. 304, 316 and 347), monel, nickel, and copper alloys.

Send specifications for quotation.

NAYLOR PIPE COMPANY
1233 E. 92nd St., Chicago 19, Ill.
New York Office: 350 Madison Avenue, New York 17, N. Y.

BREVITY—Identify by IEN - 5271 if you write the maker

COUNTING . . Wheel type electric unit for speeds to 800 and to 1,000 cpm.

Source: DURANT MFG. CO.
1930 N. Buffum St., Milwaukee 1, Wis.

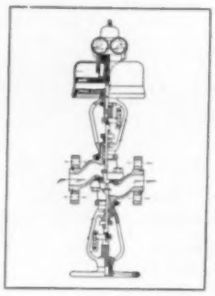
Model CS with figures ¼ in. in height and Model Y with figures measuring 3/16 in. are new additions to the company's line of Hi-Speed Productimeter counters. Both operate on 110 or 220-volt 60-cycle ac., the larger one with maximum speed to 800 cpm. and the smaller to 1,000 cpm. Dimensions are 2⅝ by 4¼ by 5 in. and 1⅜ by 2⅝ by 3⅜ in. for the two models.

Both are assembled in die-cast zinc housings and finished in gray baked enamel with aluminum side covers, brown in color except for the polished center bands. Reset buttons are provided at one end. Electric leads issue from the opposite end for connection to an actuating element that will close and open the circuit. Maximum capacity is to 6 digits.

BREVITY—Identify by IEN - 5272 if you write the maker

VALVE . . Combination line unit for both pressure and manual operation

Source: ANNIN CO.
3502 Union Pacific Ave., Los Angeles 23, Calif.



Sizes range from ¾ to 6 in. in this new combination control valve. It employs the company's Domotor piston-type operator and also its Fig. 15 handwheel operator. One mounts on top of the valve body, the other mounts beneath in an arrangement that permits retraction of the handwheel stem for either full or limited action of the pressure-operated stem.

The valve is designed for pressures to 3,000 lb. and temperatures to 1000 deg. F. It measures 6¾ to 23 in. between flanges and from 25 to 50 in. in overall height. A range of alloys can be specified in valves carried in stock.

BREVITY—Identify by IEN - 5273 if you write the maker

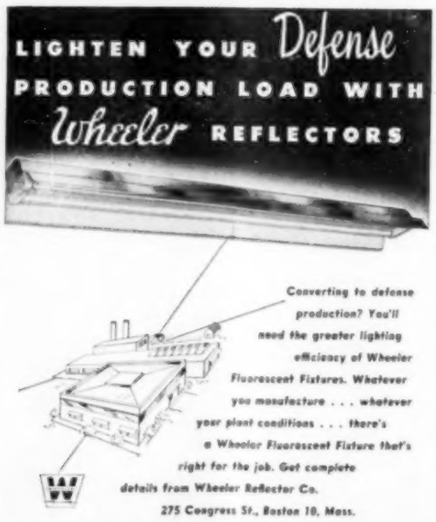
PLASTICS . . Booklet of suggestions on molding acrylic-type plastic materials

Rohm & Haas Co.
220-24 Washington Square, Philadelphia 5, Pa.

Troubles and remedies occupy about half of new 12-page pocket Booklet PL-35 on Plexiglas injection molding powders. Four to seven answers are given on 11 types of molding troubles. Other suggestions are included on mold design, predrying the molding powder, molding conditions, purging.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

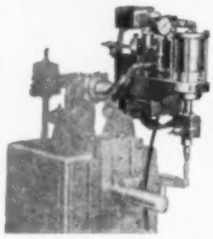
BREVITY—Identify by IEN - 5274 if you write the maker



Wheeler REFLECTORS
MADE BY SPECIALISTS IN EQUIPMENT SINCE 1881

BREVITY—Identify by IEN - 5275 if you write the maker

Solve Your Welding Problems
at HOFFMAN-CHICAGO
Spot, Butt, Seam, Gun, Flash, Projection, Multi-Point and Stud Welders



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●
WELD-AIR-MATIC
Spot welder air conversion unit. Tests prove 10,000 welds hourly or continuous daily schedules.

BUTT-ON-SPOT
Automatic butt welding attachment. Water-cooled, fits any spot welder with minimum horn clearance of 7".

DIES: complete facilities to design and build special welding dies and fixtures for your piece parts.

ACCESSORIES: complete stock of Welder Controls, Holders, Tips and Bar Stock.

Write for our current available Welder List.

ROBT. W. HOFFMAN COMPANY, INC.
42 South Clinton Street • Chicago 6, Illinois

BREVITY—Identify by IEN - 5276 if you write the maker

TO SPEED PROCUREMENT OF ELECTRICAL ITEMS —
look behind the Graybar tag

LOOK AT GRAYBAR METHODS

An intimate knowledge of supply sources . . . a nation-wide network of warehouses . . . up-to-the-minute inventory methods — all these stand behind Graybar's ability to deliver the goods.

When you order from Graybar, you take full advantage of efficient, shortage-beating distribution methods — methods that, under today's uncertain conditions, help assure you of the *fastest possible* deliveries of vital electrical supplies.

LOOK AT GRAYBAR MEN

For technical assistance on problems arising in any of the major electrical fields, you can count on the help of a Graybar Specialist. A long familiarity with electrical products enables him to help you get the job done efficiently and without delays.

Local Graybar Representatives — always close at hand — can provide forecasts of delivery conditions and defense regulations effective in your area.

LOOK AT GRAYBAR MATERIALS

Graybar distributes the products of more than 200 of the nation's leading manufacturers. A comprehensive catalog and quotation service covering over 100,000 electrical items is constantly available to help you or your electrical contractor compile job specifications and estimates. For lighting, communication, ventilation, power, or wiring, you can be sure of materials that are right for the job — via Graybar.

Graybar Electric Company, Inc. Executive offices: Graybar Building, New York 17, N. Y. 160-125

Avoid electrical delays — plan ahead . . . via GraybaR IN OVER 100 PRINCIPAL CITIES

BREVITY—Identify by IEN - 5278 if you write the maker

in your hands . .

can be a good first step toward improving spraying operations in your plant. See for yourself how Spraying Systems' specialized experience in spray nozzle design and manufacture can work for you.

Get the EXACT spray nozzle type and size to fit your need.

WRITE for Catalog 22 . . . General Catalog
Catalog 23 . . . Pneumatic Atomizing Nozzle Catalog

SPRAYING SYSTEMS CO.
9208 RANDOLPH STREET • BELLWOOD, ILLINOIS

SPRAYING SYSTEMS SPRAY NOZZLES

the SPECIFIED nozzles for industrial use

BREVITY—Identify by IEN - 5279 if you write the maker

NEW FRAME DESIGN . . . featured in **PRESS-RITE**

85 TON POWER PRESS provides GREATER STRENGTH

Also available in back-geared model.

7 Models • 5 to 85 Ton

The new No. 85 85-Ton PRESS-RITE open back-inclinable Power Press features an extra heavy uni-cast frame with built-in tie rods for extra rigidity and minimum deflection. The result is reduced misaligning or binding of dies in heavy drawing and blanking operations . . . prolonged die life and reduced scrap. It will pay you to get full details on this latest addition to the famous PRESS-RITE line.

Write today for Bulletin P650!

Sales Service Machine Tool Co.
3363 UNIVERSITY AVENUE
ST. PAUL 4, MINNESOTA

BREVITY—Identify by IEN - 5280 if you write the maker

TORNADO®

Wet or dry—positive pick-up!

Vacuum Cleaner

For over 30 years, Tornado has been used in hundreds of industrial plants, hotels, restaurants, hospitals, schools and other institutions. Tornado saves time, cuts maintenance costs, can be operated by inexperienced personnel. Sturdy, lightweight, gives years of trouble-free service. Quickly adaptable to any cleaning chore. Free demonstration—write for name of nearest representative.

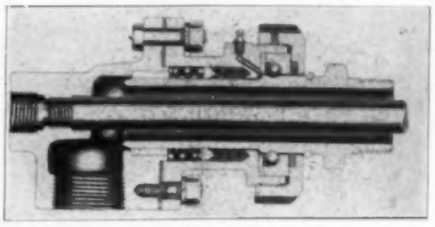
FREE! Bulletin 600-IES

BREUER ELECTRIC MFG. CO.
5100 N. RAVENSWOOD AVE., CHICAGO 40, ILL.

BREVITY—Identify by IEN - 5281 if you write the maker

PIPE FITTING . . Rotary joint connects stationary and rotating lines

Source: BARCO MFG. CO.
1804 W. Winnemac Ave., Dept. J-12, Chicago 40, Ill.



Stationary pipe lines for fluid circulation, both in and out, can be connected to rotating equipment such as dryers, rolls, calenders by application of this new Type-IBR rotary joint. The rotating sleeve, at the right-hand side, is threaded into the equipment to turn with it. The stationary elements are mounted on a ball bearing which takes both thrust and radial load and are held in alignment by a pilot sleeve bearing located to the left of the ball bearing. Between the two is an assembly of chevron packings with a follower and retaining spring. A sealed washer protects the ball bearing against entrance of dirt between the assembly nut and the rotating sleeve. Stationary pipe connections are made at the threaded openings in the side and left-hand end.

Rating is 150 lb. for steam, 200 lb. for hydraulic pressure. The unit can be applied also in vacuum service. Maximum speed is 500 rpm. for steam, 750 rpm. for hydraulic pressure. Permissible temperature is to 450 deg. F. depending on the specified packing. Sizes range from ½ to 2 inches. Body types include single and syphon or two-way flow with straight and angle connections. In the two-way design shown in the illustration a syphon pipe extends through the inlet tube for removal of condensate or discharge of gases or liquids.

BREVITY—Identify by IEN - 5282 if you write the maker

WOOD WORKING . . Protractor guide supports portable saw for angular cuts

Source: BLACK & DECKER MFG. CO.
715 E. Pennsylvania Ave., Towson 4, Md.

New saw protractor consists of a straight edge, a segment calibrated in units of 1 deg. and a movable holding arm. Desired angle is set by loosening a wing nut on the under side of the holding arm and moving the arm until the indicator points to the desired degree mark. The wing nut is then tightened and the protractor is ready for use. The side of the shoe of a portable saw is lined up with the straight edge and the saw is advanced along this edge to make its angular cut.

The protractor is particularly useful for compound mitre cuts when applied in conjunction with the bevel adjustment on the portable saw. It also can be used to lay out carpentry work involving angles. Weight is 1½ pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5283 if you write the maker

BETTER POWER TRANSMISSION

Whenever you require a reduction in speed between any prime mover and a driven machine, there is a Foote Bros. drive exactly suited to your needs.

The Foote Bros. line includes horizontal and vertical drives in either helical gear or worm gear types. Also available are Foote Bros.-Louis Allis Gearmotors in single, double and triple reductions. Call your Foote Bros. representative or write for information.

SEND FOR BULLETINS

HGA { Horizontal Worm Drives / Vertical Worm Drives / Hytop Worm Drives
LPB Line-O-Power Straight Line Drives
MPB Maxi-Power Helical Drives
GMA Foote Bros.-Louis Allis Gearmotors

FOOTE BROS. GEAR AND MACHINE CORPORATION
Dept. IEN, 4545 S. Western Boulevard
Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

BREVITY—Identify by IEN - 5284 if you write the maker

STOP HYDROSTATIC PRESSURE LEAKS

THROUGH CRACKS or HOLES IN UNDERGROUND WALLS with

SEEP-SEAL

STOPS THE LEAK IN 2 MINUTES

Water seepage, even hydrostatic pressure leaks, commonly found in underground concrete structures, are no longer a difficult problem to overcome. A simple, quick and most effective remedy is found in Seep-Seal. This amazing new formula, mixed with Portland cement, and inserted in any crack or actual hole in concrete, will set within 2 MINUTES to shut off ALL leakage. Ideal for manholes, elevator pits, reservoirs, subways, mine-shafts and similar structures. Also widely used in plaster-consistency for damp-proofing floors and walls.

Write for complete details and prices today. Immediate shipments

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 9

BREVITY—Identify by IEN - 5285 if you write the maker

"FLATWEAVE" SLINGS

Cut materials handling costs with Roebling "Flatweaves"

"FLATWEAVE" SLINGS are tops! Their broad, flat-bearing surface prolongs sling life. "Flatweaves" speed up operations because they're extra flexible, kink-resistant, and easy to handle.

Write for free copy of the "Roebling Sling Data Book." It gives the whole story about "Flatweaves", plus money-saving facts on the full Roebling line . . . a sling for top efficiency and economy on every job. John A. Roebling's Sons Company, Trenton 2, New Jersey.

ROEBLING

BREVITY—Identify by IEN - 5286 if you write the maker

WHAT DO YOU KNOW about Laminated Plastic TUBING?

Take Synthane laminated plastic tubing for example. Do you know that it is non-metallic, corrosion resistant, has excellent dielectric strength? Do you know it is made in rolled and molded forms in many grades and sizes? Do you know which grades are best for what purposes? Or how Synthane compares to metal tubing in strength and weight?

For the answers to these and other tubing questions you may have, use the coupon below to get your copy of the Synthane Tubing Folder.

Sheets
Rods
Tubes
Molded Macerated
Molded Laminated
Fabricated Parts

SYNTHANE

SYNTHANE CORPORATION
South River Road
OAKS, PENNSYLVANIA

Gentlemen:
Please send me the Synthane Tubing folder.

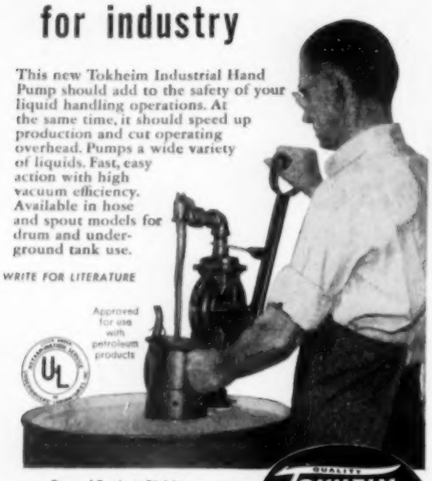
Name _____
Firm name _____
Address _____
City _____ Zone _____ State _____

BREVITY—Identify by IEN - 5287 if you write the maker

SAFER liquid handling for industry

This new Tokheim Industrial Hand Pump should add to the safety of your liquid handling operations. At the same time, it should speed up production and cut operating overhead. Pumps a wide variety of liquids. Fast, easy action with high vacuum efficiency. Available in hose and spout models for drum and underground tank use.

WRITE FOR LITERATURE



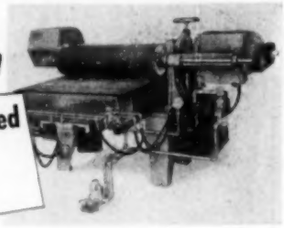
Approved for use with petroleum products

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Ave., Fort Wayne 1, Ind.
Factory Branch: 1309 Howard St.
San Francisco 3, California

QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

BREVITY—Identify by IEN - 5288 if you write the maker

Precision for improved surface finishing



CLAIR SURFACE FINISHING MACHINES

With adjustable, abrasion-proof hydraulic controls permitting rapid change of variables, these machines assure quality surface finishing on a production basis. With magnetic or vacuum chuck, Clair Machines are custom-built to solve your surface finishing problem.

For efficiency in surface finishing products like these:

Screw Drivers
Chisels • Pliers
Saws • Wrenches
Compacts • Fan Blades
Cigarette Cases
Fine Silver
Surgical Instruments
Flat Iron Sole Plates

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

BREVITY—Identify by IEN - 5289 if you write the maker

thanks to

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

Wherever Williams-Hager flanged Silent Check Valves are installed, plant maintenance men will tell you their costly water hammer troubles are over. These dependable, durable and compact valves can be placed in your water system in any position, including angular, and will provide maximum protection at all times. They are available for every service in standard pipe sizes from 1" to 20". Why not rid your plant of water hammer *now* . . . get Williams-Hager Check Valves.

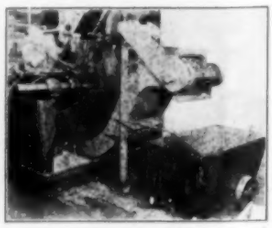
Write today for Bulletin WH-100.

CHECK VALVES
THE WILLIAMS GAUGE CO.
Pump Valves . . . Water Gauges . . . Gauge Cocks . . . Steam Traps . . . Pump Governors . . . Feed Water Regulators . . . Water Columns
2900 PENNSYLVANIA AVE. • PITTSBURGH 33, PA.

BREVITY—Identify by IEN - 5290 if you write the maker

CONVEYING . . Steel link design removes chips, turnings from a machine

Source: MAY-FRAN ENGINEERING CO.
1694 Clarkstone Road, Cleveland 12, Ohio



Steel links with upright end wings are hinged together to form the belt in this new design of the company's Chip-Tote conveyor. It receives chips and turnings from beneath a machine for transport to the rear and up to a delivery point above the floor. The belt is motor driven in connection with an adjustable friction clutch. It operates in a hopper-equipped trough. The top of the trough, terminating at the hopper, is covered to act as a "compressor" for the accumulated material to issue as an evenly-distributed mass. This prevents jamming and keeps small pieces from falling back. The conveyor is available to specification for application on a given machine.

BREVITY—Identify by IEN - 5291 if you write the maker

TRUCK . . Engine drive platform unit provides 20 sq. ft. of loading surface

Source: KALAMAZOO MFG. CO.
1825-29 Reed St., Kalamazoo, Mich.

Three speeds forward and one in reverse provide for maximum travel speed of 15 mph. in this new engine-drive Model 2500 platform truck. It is designed for utility application, can be employed to carry long over-hanging loads beside the driver. Load capacity is 2,000 lb. when the wheels are equipped with 16-in. pneumatic tires. The capacity increases to 3,500 lb. with 15-in. cushion tires. Truck weight is 1,150 pounds. Wheel-turning radius is 64 inches.

Overall dimensions are about 97 by 42 by 49 inches. Platform height above the floor is 18½ inches. Turning radius, to clear the body, is 81 inches. The engine is mounted under the driver's seat. It is a 2-cylinder air-cooled Model-TF Wisconsin unit, rating 13 hp. at 2,600 rpm. Fuel supply is held in a 5-gal. tank. Brakes are shoe-type internal-expanding, mechanically actuated.

BREVITY—Identify by IEN - 5292 if you write the maker

STEELS . . Technical data bulletin on No. 20 sulphuric-acid-resistant stainless steel

Carpenter Steel Co.
351 W. Bern St., Reading, Pa.

Analysis, corrosion resistance, working characteristics are principal topics in new 20-page bulletin, "Stainless No. 20." The data concern the company's steel in bar, tube, sheet, rolled form that is particularly for use with hot sulphuric acid. There is a 4-page summary of field reports from users.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5293 if you write the maker

CUT YOUR OWN KEYWAYS in 60 seconds at 1¢ each

Yes, sir! With a du Mont "Minute Man" Keyway Broach Kit you can cut any standard keyway from 1/16" to 1" in any bore from ¼" to 3" by hand, in one minute, for as little as a penny a keyway — at most a few cents. Think what it costs you to cut 'em any other way!

Get the facts on this great little time and money saver.

MAIL THIS COUPON

The du MONT CORPORATION, Greenfield, Mass.

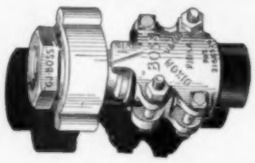
Please mail "Minute Man" Keyway Broach Kit information and price list N.

Name.....

Company.....

Address.....

BREVITY—Identify by IEN - 5294 if you write the maker



"GJ-BOSS"

GROUND JOINT FEMALE COUPLING, STYLE X-34

For Steam, Air, Water, Hydraulic Hose — High or Low Pressure

Soft-to-hard metal seal provides leakproof, trouble-free connection. Parts — malleable iron or steel, rustproofed. Furnished with "BOSS" Offset and Interlocking Clamps. Deep, smooth corrugations give an excellent gripping surface for hose when clamp pressure is applied. Sizes ¼" to 6".

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "GJ-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

BREVITY—Identify by IEN - 5295 if you write the maker

Pick 6 employees whose work is below average

Don't tell them what it's all about—just let our man test their eyes (the test takes less than four minutes).

A large percentage of slow workers, with high spoilage and accident rates, *are handicapped by defective vision.*

Thousands of plants have found that they simply cannot afford to hire a worker without testing his eyes. Periodic re-checking also pays them handsome profits.

Write us for a sample test of a few of your below-average employees — or for Bulletin E.

KEYSTONE VIEW COMPANY, Meadville, Penna. Established 1892. Originators of Binocular Vision Testing in Industry.

KEYSTONE *Occupational Visual Service*

BREVITY—Identify by IEN - 5296 if you write the maker

GRC CUTS COST AND TIME!

TINY INJECTION MOLDED PRECISION PLASTIC PARTS

Completely automatic . . . parts delivered trimmed, ready for use, in one operation, with GRC's speedy, specialized production facilities.

NYLON A SPECIALTY.

INDIVIDUAL PARTS
No limit on smallness. Intricacy and precision—our unique feature.

INDIVIDUAL INSERTS
Automatic insert feed permits wide variety of product possibilities.

CONTINUOUS INSERTS
Small members accurately spaced on tape, cord, wire, chain, etc.

Maximum Size: .035 cu.—1¼" long
NO MINIMUM!

LOW MOLD COSTS
WRITE TODAY FOR SAMPLES and PRICES

GRIES REPRODUCER CORP.
797 East 132nd Street, New York 54 • MOtt Haven 9-2476

BREVITY—Identify by IEN - 5297 if you write the maker

ON *Full* OR *Partial* LOADS

AEROTEC DUST COLLECTOR EFFICIENCY

is still high

Keeping efficiency high on a fluctuating boiler load is important in meeting dust ordinances. The Aerotec Design 3RAS Collector has solved this problem by the use of small diameter tubes.

It will be seen from the curve that 2.9 w.g., efficiency on 20 micron particles, at full load, is 98%. Reducing the load to 0.5 w.g., equivalent to half load, the Aerotec Collector still provides an efficiency of 91.5%, ample to meet most dust ordinance requirements encountered.

These small diameter tubes also provide a compact unit that will fit into almost any space requirement.

Project and Sales Engineers

THE THERMIX CORPORATION
GREENWICH, CONN.

(Offices in 28 principal cities)

THE AEROTEC CORPORATION
GREENWICH, CONNECTICUT

BREVITY—Identify by IEN - 5298 if you write the maker

IS A MUST IN THE GEARING WE MAKE FOR STROMBERG-CARLSON

Telephone Dials by Stromberg-Carlson are quiet, good-looking and as dependable as a fine watch! The smooth, efficient operation of this intricate mechanism is assured by the use of G.S. Fractional Horsepower Gearing. Stromberg-Carlson, like so many other particular manufacturers from coast-to-coast invariably specify "G.S." when they want Gearing made to the most exacting specifications. You, too, can get better, more uniform Small Gearing from this big, dependable source. Modern, big volume, mass production techniques have been developed and perfected here, to the highest known degree of economy and efficiency. The superior excellence of G.S. Gearing is the result of 30 years of specializing in the manufacture of Fractional Horsepower Gearing exclusively! Discuss your needs with our competent engineers. You won't be obligated to buy!

SEND FOR FREE NEW

6-page folder which illustrates and describes G.S. facilities, Small Gearing, and applications —with handy Charts . . for those who specify Gearing from 12 to 96 D.P. and finer. Ask for it on company stationery, please.

GEAR Specialties, Inc.

MEMBER OF

Spurs · Spirals · Helicals · Bevels · Internals · Worm Gearing · Racks · Thread Grinding

2635 WEST MEDILL AVE., CHICAGO 47, ILL.

WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF FRACTIONAL HORSEPOWER GEARING

BREVITY—Identify by IEN - 5300 if you write the maker

MOTOR . . Rates 55 hp. dc., for 300 volt rapid transit service

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Truck mounting and outline dimensions for this new 55-hp. traction motor are the same as in previous motors built by the company for rapid-transit service. The new unit is designed for car speed to 50 mph. and provides for dynamic braking. It operates with a circuit controller to establish main and control circuits for power, braking, cushioning, field shunting and reversing and with a resistance controller to vary the main motor circuit resistance to hold acceleration and braking rate as desired. Both controllers are motor-driven cam-operated assemblies.

Construction in the motor includes a replaceable armature shaft. Bearing assemblies come out of the frame when the armature is removed so they need not be opened under unfavorable conditions. Permafil-treated glass insulates the conductors. Mica and glass insulate to ground.

BREVITY—Identify by IEN - 5301 if you write the maker

DISINFECTING . . Liquid material adds to water prior to application

Source: R. M. HOLLINGSHEAD CORP.
838-42 Cooper St., Camden 2, N. J.

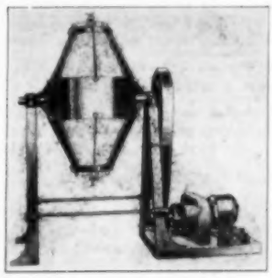
Lists at $3.50 per gallon

Whiz Puracide is a new disinfecting liquid known as a quaternary ammonium concentrate. It is packaged in metal containers and is intended for general disinfecting and deodorizing application in offices and plants. The liquid is noncorrosive, will not injure the skin. It will not stain surfaces on which it is applied. It is odorless and virtually non-toxic.

BREVITY—Identify by IEN - 5302 if you write the maker

MIXING . . Blending machine mounts a 56 gallon porcelain cone

Source: PAUL O. ABBE INC.
143-47 Center Ave., Little Falls, N. J.



Trunnion-mounted steel cradle mounts a porcelain cone in this new machine to take materials that must be kept free from contamination in the mixing action. The cradle secures the cone by means of hook bolts and steel collars. The collars also provide anchoring means to secure porcelain caps over the cone openings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

BREVITY—Identify by IEN - 5303 if you write the maker

FREE! FLOOR-CARE BOOKLET

● Send today for this 8-page booklet packed with valuable information on all types of floors. Tells you how they're made — how to clean them — protect them — make them wear longer. Answers 101 questions. Saves you time and money! Every plant and office should have one.

MAIL THIS COUPON NOW FOR YOUR COPY!

MASURY-YOUNG COMPANY
76 ROLAND STREET, Dept. C
BOSTON 29, MASSACHUSETTS

Please send me your FREE FLOOR-CARE BOOKLET

NAME .....
(Please print clearly)
COMPANY .....
STREET .....
CITY ..... ZONE ..... STATE .....

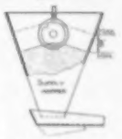
BREVITY—Identify by IEN - 5304 if you write the maker

SYNTRON

HOPPER LEVEL SWITCHES *Serve A Dual Purpose*

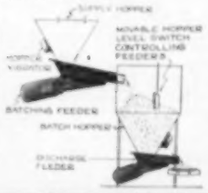
1. VOLUME CONTROL

Automatically maintaining constant full and empty levels of materials — fine or coarse — in bins and hoppers.



2. VOLUME BATCH WEIGHING

Makes easy batch weighing of some materials. Switch controls flow of material into volume hopper — shuts off supply feeder and starts batch feeder, emptying the hopper.



SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 5305 if you write the maker

THIS HOTEL PROVIDES A LESSON IN REDUCED PLANT MAINTENANCE COSTS!

Interior walls of this hotel are painted throughout with coatings based on VINYLITE Brand Resins—which cross costs of frequent refinishing right off the books!

Because: They resist water, dampness, alkalies, most strong acids, alcohols, greases, and oils, for long periods of time.

Second coats may be applied within minutes to these fast-drying true-plastic finishes. When dry, they are odorless and non-flammable. They can be put on almost any type of interior surface. They come in practically any color, either flat, semi-luster, or glossy.

Comparing favorably in cost with other good-quality paints, they may be washed repeatedly without changing their color or texture. A damp cloth removes most soil marks. Scrubbing with soap and water gets the rest.

It will pay you to investigate the economy and lasting fine appearance of interior paints based on VINYLITE Brand Resins. Write Dept. KN-3 for a list of representative suppliers.

Illustration and data on "Beauty-Shield" coatings, courtesy Plastic Coating Corp., P.O. Box 13127, Houston, Texas.

Vinylite BRAND **RESINS**

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

BREVITY—Identify by IEN - 5307 if you write the maker

Coil HANDLING at a Saving of TIME and LABOR

SABIN BARREL TRUCK

FOR HANDLING COILS OF STRIP OR WIRE, BOX STRAPPING, WHEELS, TIRES, LATHE CHUCKS OR FACE PLATES, in fact anything with a hole through it.

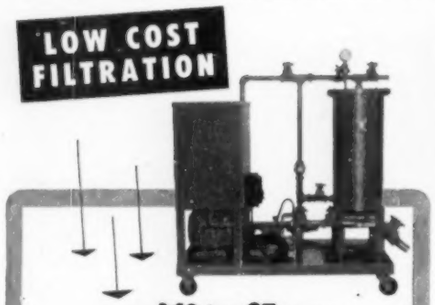
As truck is moved up to article, the arm passes through the hole, then an easy pull back on handle picks up the load. Follower wheel minimizes trucking effort.

WRITE FOR BULLETIN ON FULL LINE OF BARREL AND DRUM TRUCKS.

THE SABIN MACHINE CO.
6540 Carnegie Ave. Cleveland 3, Ohio
Manufacturers of Many Types of ONE-MAN HAND TRUCKS

BREVITY—Identify by IEN - 5308 if you write the maker

LOW COST FILTRATION



with Titeflex
The Filter with the Backwash

First, Titeflex Filters use permanent filtering elements, not bags, sheets, pads, etc. No replacement parts are required! Next, Titeflex Filters are cleaned by a foolproof backwash system, in just a few minutes, without manual labor. These features add up to efficient filtration at lowest possible cost! Titeflex Filters are made in a variety of metals, in capacities up to 10,000 g.p.h. and larger. Get the facts!

WRITE FOR FREE CATOLOG
Contains full details of sizes, capacities, motors, metals. Write for yours today.

TITEFLEX, INC.
500 Frelinghuysen Ave., Newark 5, N. J.

BREVITY—Identify by IEN - 5309 if you write the maker

TOLEDO MACHINE THREADS Million dollars' worth of pipe!

USED 20 YEARS BY TEXAS PLANT

"We use a Toledo #999 2" Pipe Machine daily in fabrication of our water treating equipment," says E. B. Hudson, Jr., of Hudson Water Softener Corp., San Antonio, Texas. "It has threaded over a million dollars' worth of pipe since August 1931—with extremely low operating cost." Threads 2" pipe in 22 seconds . . . cuts off in 10 seconds. Compact . . . portable . . . *speeds production . . . reduces costs!* Wheel or Knife Cut-Off. Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

TOLEDO
FOR PRECISION PIPE TOOLS

BREVITY—Identify by IEN - 5310 if you write the maker

MOTOR CONTROL . . Multi-unit design to centralize motor control in a plant

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.

Multitrol trade names new combination of free-standing steel enclosure sections to take a required number of previously assembled motor-control units with the necessary interconnections to centralize control equipment to motors in various locations in a plant. The equipment is designed for control in circuits to 600 volts using components not larger than NEMA Size 5. Individual sections measure 20 in. in width and depth by 76 or 90 in. in height overall.

The control units are built to AIEE and NEMA standards and are available with magnetic full-voltage starters for reversing and non-reversing operation, with multi-speed starters, primary or secondary-resistance starters and autotransformer starters. Standard designs include externally-operated circuit breakers, thermal overload and low-voltage protection. Detail information in illustrated 4-page Bulletin 4410.

BREVITY—Identify by IEN - 5311 if you write the maker

CLEANING . . Portable vacuum machine for wet or dry pickup, universal motor

Source: HUNTINGTON LABORATORIES INC.
Hunt St., Huntington, Ind.

Drive is by a ¾-hp. universal motor for operation on 110-volt ac. or dc. in this new Model-95 assembly in the company's line of portable vacuum-cleaning machines. Intake is through a 1½-in. hose. Assembly weight is 30 pounds.

Equipment includes a 10-ft. flexible hose, steel floor-cleaning tool, floor head, upholstery head, air-filter bag and a 35-ft. extension cord and plug. For wet cleaning the machine employs a water-pickup pan and a floor-squeegee tool in addition to the equipment for dry operation. Storage capacity is 1½ bu. of dry dirt or 9½ gal. of water and dirt.

BREVITY—Identify by IEN - 5312 if you write the maker

SHIPPING . . By air through New York described in revised 28-page information booklet

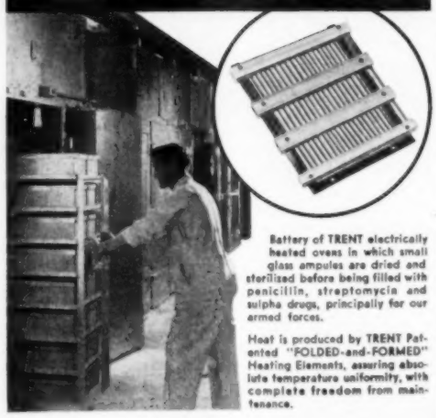
Port of New York Authority
111 Eighth Ave., Room 1516, New York 11, N. Y.

How to route air cargo through New York by air, rail, truck from inland points is the major section in revised booklet, "Guide to Air Shipping via the Port of New York". There is a cost analysis sheet of surface vs. air shipping, an export document checklist, and tables of rates, charges, tariffs.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5313 if you write the maker

Destination: Korea!



Battery of TRENT electrically heated ovens in which small glass ampules are dried and sterilized before being filled with penicillin, streptomycin and sulpha drugs, principally for our armed forces.

Heat is produced by TRENT Patented "FOLDED-and-FORMED" Heating Elements, assuring absolute temperature uniformity, with complete freedom from maintenance.

"FOLDED-and-FORMED" Heating Elements are available in standard 12" x 12" racks for easy installation, horizontally or vertically, in multiples to meet any capacity requirement, at temperatures up to 1350°F. Five year guarantee.

TREN INC
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

BREVITY—Identify by IEN - 5314 if you write the maker

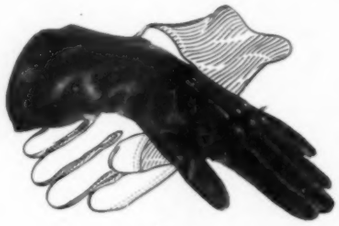
IT'S BORIUM

The blast cleaning nozzle that lasts and lasts and lasts

Hard, wear-resistant Cast Tungsten Carbide Liner.
Resists cut-outs.
Retains almost uniform orifice size throughout life.
Saves compressed air.
Keeps patterns beamed on the work.
Guaranteed 300 hours when cleaning with silica sand or most common abrasives. Usually lasts longer!
BORIUM Nozzles are made in standard screw and flange types. Special BORIUM Inserts can be furnished to your specifications. Write for descriptive folder.

STOODY COMPANY
11930 East Slauson Avenue
Whittier, California

BREVITY—Identify by IEN - 5315 if you write the maker



THE Velvet WORKHORSE

For gentle, careful, perfect marking of your products, use Matthews' Rubber Marking Devices . . . built to perform in industrial production.

For constant or interchangeable coding, inspecting, identification or decorating of a limited number of parts a day, a hand or rocker-style stamp may be all you'll need. Where your production runs into thousands every day, you'll prefer an automatic, high-speed marking unit. In either case, you'll do it better with a Matthews Marking Device.

Write or phone your nearest Matthews Sales Office today for complete information and literature . . . Bulletin LI-M.

JAS. H. MATTHEWS & CO.
3948 FORBES ST., PITTSBURGH 13, PA.
NEW YORK BOSTON PHILADELPHIA CHICAGO
NEWARK SYRACUSE CLEVELAND CINCINNATI
DALLAS BIRMINGHAM LOS ANGELES

BREVITY—Identify by IEN - 5317 If you write the maker

Portable SELENIUM RECTIFIER POWER SUPPLY

for

INDUSTRIAL, GOVERNMENT, ELECTRONIC & RESEARCH LABORATORIES

Invaluable for

PRODUCTION LINE TESTING

SELENIUM RECTIFIER

FULL WAVE • SIX PHASE

PORTABLE • WITH HANDLES

D. C. OUTPUT: 24 to 32 volts, 30 amperes. Continuously variable from 24 to 32 volts by means of rheostat control saturable reactor.
A. C. INPUT: 220 volts, 3 phase, 60 cycles.
REGULATION: Plus or minus 4% from 0 to full load current.
AMBIENT TEMPERATURE: Designed to operate at 40° C.
CONVECTION COOLED: Speed of response: 0.4 second.
SIZE: 18" x 14" x 18". Aluminum cabinet. Wgt. 150 lbs.
NET PRICES: FOB College Pt. MODEL A (D. C. Ripple 1½%) $485. MODEL B (D. C. Ripple 3%) $450.

Furnished complete with voltmeter, ammeter, 6 ft. 3 phase cord and locking plug. D.C. circuit breaker. A.C. fuses, on/off switch, pilot light. Also available in KIT FORM (Model C) for Schools.

RICHARDSON-ALLEN CORPORATION
RECTIFIER SPECIALISTS
116-15 15TH AVE., COLLEGE POINT, L. I., N. Y.

BREVITY—Identify by IEN - 5318 If you write the maker

FOR WASHING AND CLEANING OILY, GREASY, ETC. PARTS

Practical, Simple Machines

Pats. Pending
FULLY AUTOMATIC
No pumps, sprays or hand work.

Automatic machines developed from the old, proved "hand-dunking" method (used for years) into practical units, with an added ACTIVE soak and ACTIVE wash action.

Use COLD or HOT solutions.

Sizes to meet your requirement.

Please write for details.

THE SUPER-SOAK COMPANY

1441-3 South 65th Street — West Allis, Wis.

BREVITY—Identify by IEN - 5319 If you write the maker

LINEMASTER puts feet to work when hands are busy! Compact switch operates with light pressure from foot — or knee, if mounted on bench on side of wall. Increases production by allowing full use of both hands. Prevents accidents to fingers. Sturdy cast iron housing, black crackle enamel finish. Simonds LINEMASTER offers low first cost, and years of trouble-free operation.

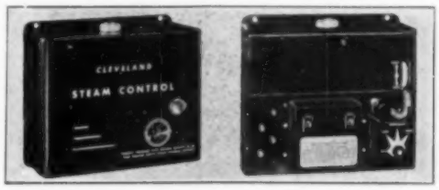
WRITE FOR BULLETIN AND PRICES | Let us quote on your special switch requirements

SIMONDS MACHINE CO., Inc. 50 SAXON ROAD SOUTHBRIDGE, MASS.

BREVITY—Identify by IEN - 5320 If you write the maker

CONTROL . . Pressure actuated unit regulates burner, stoker, boiler draft

Source: CLEVELAND FUEL EQUIPMENT CO.
7314-18 Associate Ave., Cleveland 9, Ohio



Model SC-B designates a new master regulator that has been added by the company to its line of combustion-control equipment. It establishes automatic pressure-actuated regulation over the operation of a stoker or oil or gas-fired burner and over the dampers and draft blowers on a boiler. The control can be set to a desired pressure, after which it will maintain conditions by operating the company's push-pull motor-driven screw-operated Lectricarm drive units at the control points. These units provide a 6-in. stroke with load rating at 100 or 200 lb. for the drive.

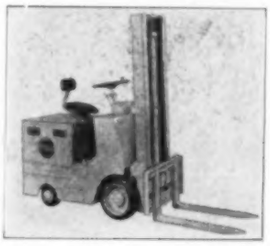
Actuating pressure is supplied to the regulator through a ¼-in. line from the steam space on the boiler. Electrical connections are made between the regulator and the Lectricarm drive units at their points of installation.

Bulletin, "Combustion Controls," 12 pages, presents illustrated data on company's damper controls, Lectricarm drive units, master regulator, draft, air and flue gages.

BREVITY—Identify by IEN - 5321 If you write the maker

TRUCK . . Power lift fork design, battery and motor drive, rates 1 ton

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio



The operator rides in seated position on a formed seat, with padded back rest, at a steering wheel on the left-hand side of this new truck. It is known as Type-FS Center Control fork truck and is designed to handle 1-ton loads measuring 48 in. in length. The operator selects direction of travel at a lever. He controls movement, forward or reverse, in five speeds by depressing an accelerator pedal. A second pedal operates a mechanical brake. Tilt and hoist-control levers are located beside the directional-travel control. In addition to the mechanical brake, the truck is equipped with dynamic braking actuated by reversing the travel controller.

The truck measures 32½ in. in width and can be operated in 59-in. intersecting aisles. It measures 83 in. in overall height in lowered position and has a total lift of 130½ inches. Initial lift, prior to employing telescopic action, is 65 inches. The forks measure 36 in. in length and have maximum outside spread of 32 inches. Recommended battery is a 36-volt 350-amp. hr. unit. Weight with the battery is 4,950 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

BREVITY—Identify by IEN - 5322 If you write the maker

CROOKED CONTROL?

IT PAYS TO "GO STRAIGHT" WITH WHEELCO CAPACILINE

Get "straight-line" control with the Capaciline! This simple, low-cost, supplementary control device adds the equivalent of proportioning control to your present instrument. Ideal for use on ovens, furnaces, kilns, plastic injection and extrusion machines, etc. Saves fuel—eliminates spoilage—prevents "over-and-undershooting"—insures product uniformity.

Use the Capaciline with any "on-off" pyrometer controller—no tubes to burn out—no gears or cams to wear—low in cost. Write today for Bulletin CL-1, Wheelco Instruments Company, 845 W. Harrison Street, Chicago 7, Illinois.

wheelco *electronic controls*

BREVITY—Identify by IEN - 5323 If you write the maker

HEAVY-DUTY SWITCHES

(for 20 and 30 amp)

. . . built to take it!

Tough construction and smooth action are the double features that make G-E heavy-duty switches important wiring news!

These tough, T-rated switches are protected by an over-all plastic housing. Housing is extra shallow for extra wiring space in boxes. Pressure connectors, designed for convenient back wiring, make installation quick and easy.

General Electric heavy-duty switches are available in single-pole, 3-way, double-pole, and single-pole quadruple break types. For complete information write Section D52-542 Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

GENERAL ELECTRIC

BREVITY—Identify by IEN - 5324 If you write the maker

Increase Arc-Time . . . Welding Output 50%

with Worthington-Ransome Turning Rolls

Eliminate waste waiting time—turn cylindrical pieces automatically . . . continuously . . . at any desired speed.

And get better welds . . . because all welding is done in *downhand* position with heavier electrodes.

Capacities 3 to 150 tons.

Important Features

- **Anti-friction bearings.**
- **Stepless-adjustable variable speed drive.**
- **Faster load handling—due to drive being lower than rollers.**
- **Easy maintenance—complete drive quickly removable.**

Write for Bulletin 228, Worthington Pump & Machinery Corporation, Welding and Assembly Positioning Equipment Division, Dunellen, N. J.

WORTHINGTON

WORTHINGTON-RANSOME TURNING ROLLS

BREVITY—Identify by IEN - 5325 If you write the maker

HALLOWELL UNI-TRUK

HEAVY-DUTY TRUCKS FOR *TOUGH* JOBS

Tough jobs are easy with these sturdy, 2-wheel HALLOWELL Trucks. All-welded, all-steel construction minimizes weight (heavier model #738 weighs only 50 lbs.), cuts maintenance costs, lengthens truck life. Ribbed, angle-form steel nose carries heavier pay loads without bending, reinforces "UNI-TRUK" at point of severest stress. Two popular models: #738 with 8" wheels and braced legs; #734 with 6" wheels, no legs.

Write for Bulletin 718-2.

HALLOWELL

MATERIALS HANDLING EQUIPMENT

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 5326 if you write the maker

SHENANGO Centrifugal CASTINGS ... KEY TO SAVINGS

Typical of innumerable special shapes cast centrifugally by Shenango, these splined "star" rolls of Meehanite Metal are used to convey coated cloth and synthetic material through a hot fast-drying process.

Why these rolls will do a **better** job, **longer!**

WHEN symmetrical shapes, such as these "star" rolls, are cast *centrifugally* by Shenango, they gain qualities that can't be matched in ordinary castings.

For example, metal for metal there's pressure-dense grain for finer, smoother finish; higher tensile to better resist stress and impact; freedom from sand inclusions, blow holes and other hidden defects to reduce rejects and avoid costly, unexpected failure.

So, when it comes to symmetrical shapes, large or small, ferrous or non-ferrous, you'll always be time and money ahead when you specify Shenango *centrifugal* castings . . . either rough or precision finished in the modern Shenango shops.

HELPFUL BULLETINS—Bulletin No. 150 covers Shenango non-ferrous centrifugally cast parts; Bulletin No. 151 for parts of Meehanite Metal, Ni-Resist and other special iron alloys. Either or both are yours for the asking.

SHENANGO-PENN MOLD COMPANY
791 West Third Street • Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO
ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

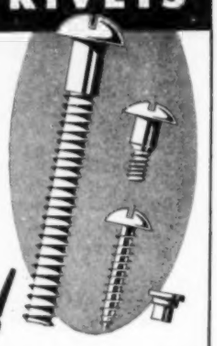
BREVITY—Identify by IEN - 5327 if you write the maker

Beaver-Bilt

SCREWS
STUDS • RIVETS

Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS



Prompt Delivery!

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

Beaver Industries
METAL FASTENER DIVISION
1500 WEST ADAMS STREET, CHICAGO 7, ILL

BREVITY—Identify by IEN - 5328 if you write the maker

The *Compactness* of HONEYWELL BY-PASSES

will simplify your piping

The Honeywell By-Pass is a compact, neat, easily-installed means of by-passing control valves, traps and other pressure units. It simplifies piping arrangements by eliminating a multitude of joints, nipples and elbows . . . by using a minimum of space . . . by saving time . . . by minimizing maintenance.

Available in Bronze as follows: sizes ½ to 2 inches . . . Bronze or Stainless trim . . . union bonnet . . . screwed ends . . . 150-300 lbs. . . . from $21 to $116. Available in Cast Steel as follows: 1 to 2 inches . . . union bonnet for 1" and 1¼", bolted bonnet for 1½" and 2" . . . Stainless trim . . . screwed or flanged ends . . . 300-600 lbs. . . . from $228 to $426. Send in your order, today!

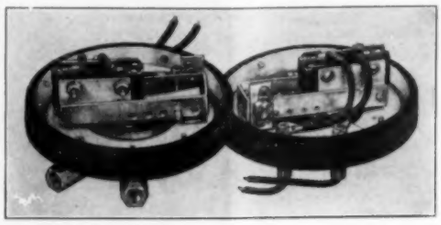
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell VALVE PRODUCTS

BREVITY—Identify by IEN - 5329 if you write the maker

SWITCH . . Pressure operated, vacuum or pressure to 4 in. of water

Source: F. W. DWYER MFG. CO.
315-19 S. Western Ave., Chicago 12, Ill.



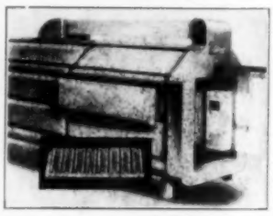
Slack diaphragm in this new low-pressure sensitive switch is linked to a Micro switch by a beryllium-copper spring so changes in position of the diaphragm are transmitted through the spring to operate the switch. Electrical rating is 10 amp. on 110-volt ac. Overall range is from vacuum to pressure at 4 in. of water on each side of zero.

Model 1620 measures 4½ in. in diameter, has a minimum setting of .25 in. of water and a differential between make and break of .20 inch. Model 1625 measures 7 in. in diameter. It has a minimum differential of .05 in. in the lower settings and 10 per cent or more of setting in the higher ranges. Pressure or vacuum is introduced into the diaphragm chamber through a ⅛-in. pipe connection.

BREVITY—Identify by IEN - 5330 if you write the maker

HEATING . . Electric oven made in panel assembly, to 650 deg. F.

Source: JENSEN SPECIALTIES INC.
9329-33 Freeland Ave., Detroit 28, Mich.



Standardized panels, measuring 11 and 46 in. in width, are designed to mount on 7-ft. frame centers to make an oven assembly suited for a given run of work or to change from one assembly to another to meet changing conditions. Each panel carries 4 in. of glass-fibre insulation, is faced on its interior surface with aluminum reflectors back of rod-type electric heating elements of specified make.

BREVITY—Identify by IEN - 5331 if you write the maker

GOVERNMENT . . National Defense agencies listed in new 92-page directory with their addresses

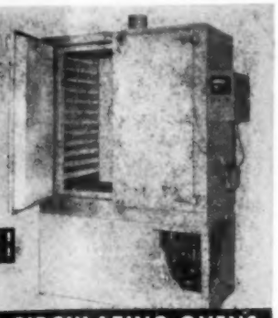
Superintendent of Documents
Government Printing Office, Washington 25, D. C.

Air Coordinating Committee to Subversive Activities Control Board is the range of Federal agencies included in new directory "Emergency Defense Activities", list price 25 cents. It gives location, personnel, telephone numbers and an outline for each. Please send your inquiry and remittance direct.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5332 if you write the maker

BLUE M LINE



DRYING BAKING

VERSATILE! DEPENDABLE!

FORCED AIR CIRCULATING OVENS

AUTOMATIC TEMPERATURE CONTROL plus QUICK HEAT PICK-UP to avoid excessive temperature drop when oven is loaded and unloaded.

1. Rugged heavy oven steel construction.
2. All wiring complete ready for hook-up to power supply.
3. Guaranteed MODELLA elements.
4. Adjustable and removable shelves furnished.
5. A dynamically and statically balanced CASTALOY turbo blower driven by a ball bearing motor provides horizontal air velocity thruout entire working chamber.

Temperature ranges: from 100° F to 400° F, 100° F to 600° F
Sizes: from 24" wide x 24" high x 20" deep, inside dimen.
Voltages: 220 Volts or 440 Volts
Model FC-48 illustrated—I.D. 48"H x 48"W x 30"D
* *Write for specifications to suit your particular need.*

* CONTACT YOUR LOCAL DEALER or

BLUE M ELECTRIC CO.
306-8 W. 69th ST. CHICAGO 21, ILL.

BREVITY—Identify by IEN - 5333 if you write the maker

GET RID OF WIRES

and get foolproof connections in
RADIOS
AMPLIFIERS
SWITCHBOARDS
METERS

Print your circuits with Du Pont Conductive Coatings—reduce costs and time

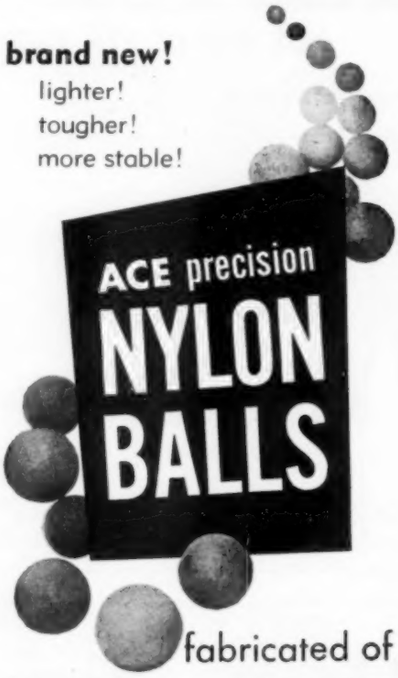
Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

DU PONT ELECTROCHEMICALS

DU PONT

BREVITY—Identify by IEN - 5334 if you write the maker

brand new!
lighter!
tougher!
more stable!



fabricated of

DuPONT NYLON

FM #10001 to close tolerances

SIZES: ⅛" to ¾". TOLERANCES ± .001

ACE is first in the world to give you mass-produced, close tolerance balls of DuPont Nylon FM #10001. These are tough at low temperatures . . . abrasion-resistant . . . have form stability at high temperatures . . . are light in weight . . . resistant to chemicals. Use them on valves, valve components, specialized anti-friction bearings, detents and mechanical checks and many other industrial applications.

LET OUR ENGINEERS ADVISE YOU

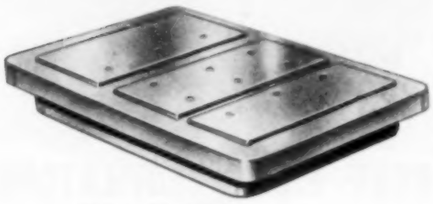
Complete facilities for fabricating plastic parts for all industries. Estimates submitted promptly upon receipt of your blueprints or specifications.

Write today for samples and bulletin

ACE PLASTIC COMPANY
Precision Plastic Fabricators
91-24 VAN WYCK BLVD. JAMAICA 2, N. Y.

BREVITY—Identify by IEN - 5336 if you write the maker

PRATER PERMANENT MAGNETS



HIGH FREQUENCY EXTRA STRENGTH

Reaches inches deep into flow to weed out all unwanted tramp iron. Operates with powerful Alnico magnets. No visible nuts, bolts or sharp edges to hinder production. No complicated adjustments or wiring problem. Many trouble-free years of dependable service. Easily installed at any point of flow on most metal or wood constructions. Send for complete facts, today.

PRATER PULVERIZER COMPANY

1536 S. 55TH COURT • CHICAGO 50, ILL.

BREVITY—Identify by IEN - 5337 if you write the maker

Standardized Steam

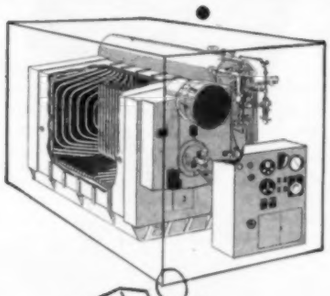
for loads of

3,500 to 25,000 per hr.

•

IT'S THE *NEW* B & W SHOP-ASSEMBLED UNIT

•



B&W Integral-Furnace Boiler, Type FM

Note these *Cost-Saving* features

Saves Erection Time and Cost • Meets Wide Range of Services • Handles Quick Load Changes • Fast Steaming • Low Maintenance • Easy Accessibility • Suitable for Outdoor Service • Burns Oil and/or Gas • Saves Fuel • Saves Space • Safe, Automatic Operation.

SEND FOR BULLETIN G-72, detailing the many advantages of this new B&W creation in low-cost steam generation. The Babcock & Wilcox Company, 85 Liberty Street, New York 6, N. Y.

BABCOCK & WILCOX

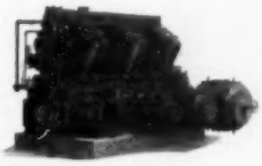
Helping Industry Cut Steam Costs since 1867

G-536

BREVITY—Identify by IEN 5339 if you write the maker

COMPRESSOR . . Gas engine drive, integral with compressor cylinders

Source: INGERSOLL-RAND CO.
11 Broadway, Dept. NR, New York 4, N. Y.



Type SVG is a new design of integral assembly between horizontal compressor cylinders and V-type pairs of gas-engine cylinders in 6 and 8 engine-cylinder units for ratings of 330 and 440 hp. at 400 rpm. Design is based upon the previous XVG compressor, initially introduced about 20 years ago. Features in the new machine include aluminum pistons, counterweighted crankshaft, chromium-plated top piston rings, centralized location for controls and valves at the operating end to include a manifold depression gage to check load variations, means for both power and hand oil circulation and equipment to cool the oil.

Starting is by pneumatic pressure at 200 pounds. Control is by a centrifugal governor which varies the amount of air and gas mixture admitted to the power cylinders. The governor is driven by roller chain. Regulation is standard by hand control down to 50 per cent of rated speed. A speed-pressure element is available to provide automatic capacity control while maintaining a constant intake or discharge pressure by variation of engine speed. Overall length in line with the engine crankshaft is about 11½ and 15 ft. in the two engine sizes.

BREVITY—Identify by IEN - 5340 if you write the maker

PRESS . . Two point eccentric design to blank, draw, form, rates 700 ton

Source: E. W. BLISS CO.
1418-22 Hastings St., Toledo 7, Ohio

Double gear drive for this new press includes separate intermediate shafts operating in oil and two main-gear eccentric units mounted on and keyed to large diameter shafts that ride in crown bushings. The drive transmission includes a single-disc pneumatic friction clutch with self-centering friction plates. Plate replacement can be made without disassembling the clutch or any part of the press. Unit assembly of the brake and clutch prevents engaging both at the same time.

Operation is at 16 strokes per minute with stroke length at 12 in. and stroke adjustment by means of a motor at 7 inches. Die space with the stroke down and adjustment up is 32½ inches. Slide and bed area measure 54 in. front to back by 78 in. right to left. The bolster plate is 8½ in. in thickness. It is drilled and slotted to JIC standards.

Standard equipment includes two 24-in. Bliss-Marquette pneumatic cushions with 96-ton capacity at 100-lb. air-line pressure. The driving motor rates 50 hp. and operates at 1,200 rpm. Lubrication is by a cascade system in the slide to all points in the crown and by a floor line grease installation to all of the other points in the press assembly.

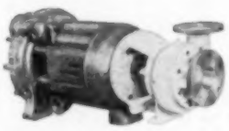
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 5341 if you write the maker

A PAID NEWS ADVERTISEMENT BY BYRON JACKSON CO.

BJ BILTON PUMP with STEAM TURBINE DRIVE...

brings close-coupled pump installation advantages to steam power users



This new Steam Turbine Driven BJ Bilton Pump is a close-coupled combination of the Byron Jackson TL Bilton Pump and a Moon Steam Turbine. It provides a compact, general-purpose pumping unit for plants using steam as their primary power. Also serves as standby pump in plants where steam is used as emergency power. Features include: *Simplified installation*—mounts in any position, no rigid foundation necessary; *Efficient operation*—steam turbine allows close regulation of power, even at high speed, and assures economy under variable loads; *Easy to service*—interchangeability of all basic parts means small inventory can service many pumps.

APPLICATION—for low to medium-high head service. Standard models recommended for water supply, air conditioning, and general liquid handling. *Pump sizes* from 1¼" to 3".

CAPACITIES to 600 gpm. HEADS to 320 ft.

Also available in special construction . . . including BJ Mechanical Seal for handling liquids with special temperature, chemical or pressure factors.

BYRON JACKSON CO.
PUMP DIVISION
P.O. Box 2017, Terminal Annex, Los Angeles 54, Calif.
OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 5342 if you write the maker

When is a lathe too big?

A lathe is too big when:

SHELDON CHICAGO

(1) When it is too large and complex for any but the most experienced to operate safely.

(2) When the power cost is excessive for the tool load.

(3) When the tool investment is out of all proportion to the requirements.

(4) When it is too cumbersome and too slow.

(5) When it takes up floor space, heat and light in which output could be multiplied with smaller machine tools.

Modern Sheldon Precision Lathes eliminate these excess costs and loadings on many everyday operations—leaving far more on the profit side. 10", 11" and 13" Swing. "Zero Precision" Tapered Roller Bearings. Increased collet capacity.

Write for Catalog.

SHELDON MACHINE CO. Inc.
4208 N. KNOX AVENUE • CHICAGO 41, ILLINOIS, U. S. A.

BREVITY—Identify by IEN - 5343 if you write the maker

THREE DIAL SIZES 12 INCH 24 INCH 36 INCH

•

LOW HEAD ROOM

MODELS 500 TO 100,000 POUNDS CAPACITY

•

HYDRAULIC ACCURACY

HYDROSCALE

A rugged, compact crane scale that eliminates the need for weighing stations by checking the load when you lift to move it. Eliminates equipment tie-ups and lost man hours. Write for our catalog today.

SAVE TIME AND SPACE

HYDROWAY SCALES, INC.
20674 WEST 8 MILE ROAD • P. O. Box 4754 • DETROIT 19, MICH.

BREVITY—Identify by IEN - 5344 if you write the maker

FLEXLOC

SELF-LOCKING NUTS

STAY TIGHT

AFTER 171,360,000 VIBRATIONS AT 4000 CYCLES PER MINUTE

Plain nuts with lock washers loosened after only ONE HOUR of 4000-cycle-per-minute operation on the vibrator of a concrete block machine at the plant of the Bethayres Concrete Block Co., Bethayres, Pa.

When FLEXLOC Self-Locking Nuts were installed, they were *still tight* when the machine was torn down for rebuilding after 6 weeks operation—at 4000 C.P.M., 17 hours a day, 7 days a week!

If you have an application where nuts loosen or back off, try FLEXLOC, the one-piece, all-metal STOP-and LOCK-NUT "that won't work loose."

Send for Bulletin 619-A today.

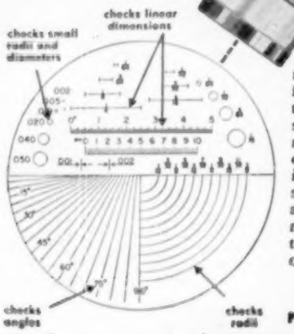
SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

▼ BREVITY—Identify by IEN - 5345 if you write the maker ▼

new POCKET COMPARATOR

(pat. applied for)

Saves time and money inspecting small dimensions



A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE **$36.00** ORDER TODAY

a product of **BELL & HOWELL CO.** *distributed by*

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

▼ BREVITY—Identify by IEN - 5346 if you write the maker ▼

NEW PERMANENT NON-SLIP

FIRM-GRIP *Genuine* NEOPRENE LATEX **GLOVES**

- **Permanent** NON-SLIP on all 5 Fingers and Palm. Highly efficient embossed surface is ***integral part*** of glove
- **Impregnable** to ACIDS, CAUSTICS, OILS
- **Curved** FINGERS for Comfort and Easy Use

No. 5740-S LONG GAUNTLET
Length 14", Gauge .030 to .040
Sizes 9, 10, 10½, 11, 12

No. 5720-S LIGHT DUTY
Length 10½", Gauge .017 to .020
Sizes 7, 7½, 8, 8½, 9, 9½, 10, 11

★ Write for sample and prices

SEIBERLING
LATEX PRODUCTS CO.
AKRON 9, OHIO

200-5th Ave., New York
Merchandise Mart, Chicago

▼ BREVITY—Identify by IEN - 5347 if you write the maker ▼

SEND FOR YOUR COPY OF THIS CATALOG TODAY!

64 pages of valuable information describing the entire Honeywell line of Industrial Control Devices

The kind of information you want, right at your finger tips . . . on pneumatic and electric non-indicating controls for temperature, pressure and humidity.

Included are many types of switches and relays . . . temperature and pressure controllers . . . all types of valves . . . and scores of other inexpensive, accurate and dependable controls.

Catalog No. 8303 is complete and factual . . . contains detailed specifications for all products, with complete supplementary price lists. It belongs in your files . . . send for your copy today. MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell
BROWN INSTRUMENTS

▼ BREVITY—Identify by IEN - 5348 if you write the maker ▼

SCREENING . . Multi-sieve machine for granular and pulverized materials

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.

Circle Sifter is a new machine designed to handle dry free-flowing granular products. It assembles a stack of 3, 4 or 5 sieves, depending on the product to be handled, the capacity and the screen mesh. It employs a balanced driving mechanism that imparts gyratory motion to the sieves causing all areas to move in identical circles. The drive is mounted in anti-friction bearings and is belt connected to a fractional horsepower motor. Assembly weight is about 400 lb.

▼ BREVITY—Identify by IEN - 5349 if you write the maker ▼

PUMP . . Hand operated unit to dispense liquid from containers

Source: TOKHEIM OIL TANK & PUMP CO.
1600-04 Wabash, Fort Wayne 4, Ind.

Single diaphragm in this new pump is operated to act in both forward and reverse direction by means of a hand lever. The pump applies in a 1½ or 2-in. bung opening in a drum or tank. It is equipped with a bung adapter and a clamping screw that can be tightened on the suction pipe by hand. The pipe is galvanized. Metal parts that are not made of stainless steel in the pump assembly are Permolited on the inside to prevent corrosion. The pump is suited for use on various types of oil, glycerin, alcohol, water, turpentine, solvents.

Three models, known as 970, 971 and 972, provide for filling cans and small containers or include a static wire hose and vacuum breaker and an 8-gallon flow meter. The design is self-priming in its operation.

▼ BREVITY—Identify by IEN - 5350 if you write the maker ▼

MANAGEMENT . . Sound color film describes need for economy in Government

Harnischfeger Corp.
4402 W. National Ave., Milwaukee 14, Wis.

How to hold down the national budget by efforts of business, labor and agriculture is described in new color sound slide film, "The Fourth Man". Its title derives from government, the fourth individual in the group portrayed by the film. You can secure the film on loan for group showings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 5351 if you write the maker ▼

This new WELDING DESIGN MANUAL

yours . . . FREE for the asking!

EUTECTIC

To assist you in your re-tooling problems . . . or to help you analyze your present welding methods so that you may enjoy maximum speed, efficiency, and economy in many of YOUR production problems, EUTECTIC offers – FREE of charge and without obligation – this new, packed-full-of-information book!

Over 40 pages of helpful data covering basic and advanced welding techniques and designs used in fabricating and assembly. Profusely illustrated with scores of application drawings, weld diagrams, how-to-do-it sketches, etc. In addition, you will find page after page of tables containing latest information on melting temperatures, tensile strengths, corrosion factors, nomenclature, alloy recommendations, etc. Convenient digest size.

THIS PARTIAL LIST OF CONTENTS SHOWS THE WEALTH OF VALUABLE INFORMATION IN THIS HANDY MANUAL– *yours FREE*

Re-Tooling Now? . . . or Later??

Some firms have already started their re-tooling operations, some are still in the planning stage. Regardless of which stage YOU are in, it will pay you to start checking up NOW on the latest welding techniques and on the many ways you can speed productive output while you cut production costs through a revision of your welding designs and techniques. *Send for your FREE copy of this helpful manual TODAY.*

SEE HOW 10 years of EUTECTIC'S continuing welding research have evolved radically new metal joining techniques and designs. WHY over 67,000 plants throughout America specify genuine "EUTECTIC" for all their welding alloy needs. WHICH of your present designs can be altered to take advantage of these new production methods.

EUTECTIC WELDING ALLOYS CORPORATION
40-40 172nd Street, Flushing, New York

▼ BREVITY—Identify by IEN - 5352 if you write the maker ▼

ELIMINATE "HOT" SPOTS WITH BURT F.E.F. VENTILATORS

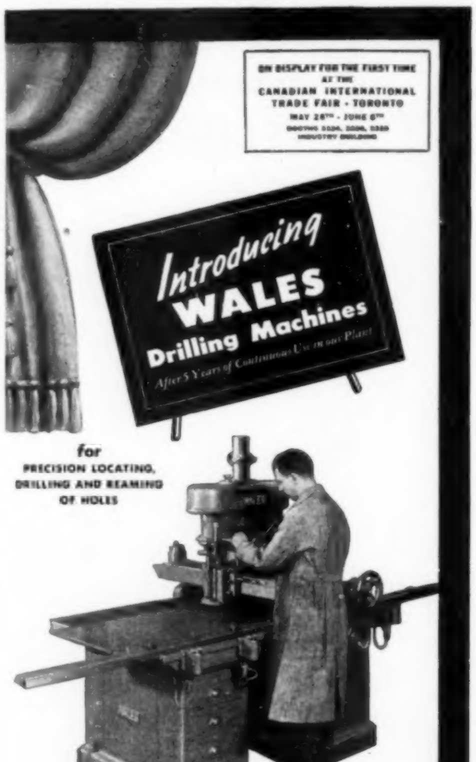
This new Burt Free Exhaust Fan Ventilator does a remarkable job in the rapid localized removal of smoke, fumes, dust and heat. Its absolute free opening exhausts a very large volume of air which is driven vertically upward at high velocity by the Burt Axial Flow Fan. Dampers open automatically with fan blast — drop closed to completely weatherproof unit when fan is shut off. Easy to install, maintain and service. See Sweets for details or write for Bulletin SFV-18

FAN & GRAVITY VENTILATORS • LOUVERS • SHEET METAL SPECIALTIES

The Burt Manufacturing Company
909 So. High Street • Akron 11, Ohio

▼ BREVITY—Identify by IEN - 5353 if you write the maker ▼

ON DISPLAY FOR THE FIRST TIME AT THE CANADIAN INTERNATIONAL TRADE FAIR - TORONTO
MAY 28TH - JUNE 8TH



for PRECISION LOCATING, DRILLING AND REAMING OF HOLES

For the first time, after 5 years of using these Wales designed, engineered and manufactured Drilling Machines in our own plant, they are now introduced to the thousands of manufacturers, who like ourselves, require *precision* locating, drilling and reaming of holes in material of practically any length and up to 36" wide. **There is no other drilling machine or jig borer like it.** It fills a definite need.

Accuracy is the primary consideration in building this exclusive, specially designed and ruggedly constructed Wales Drilling Machine which combines simplicity of operation, easier locating and faster production.

Conveniently located built-in 1/32" scales and dial-type gages calibrated in ten thousandths of an inch, used in conjunction with precision end measures, accurately locate the drill head and slide rail.

Have the complete story of this Wales Drilling Machine at your finger-tips by writing for the NEW fully-illustrated, functionally-colored Catalog D M *today.*

WALES-STRIPPIT CORPORATION
GEORGE F. WALES, *Chairman*
361 PAYNE AVE., NORTH TONAWANDA, N. Y.
(Between Buffalo and Niagara Falls)
WALES-STRIPPIT OF CANADA LTD., HAMILTON, ONTARIO

Specialists in Punching and Notching Equipment

BREVITY—Identify by IEN - 5355 If you write the maker

Cost Less Because
THEY'RE SURESEAL PK COATED

These tough-hided gloves will knock your costs for a loop on the rough jobs. Tops in chemicals, too. Man-sized, comfortable curved fingers. All standard styles. Ask your distributor, or write direct.

Dept. I

THE SURETY RUBBER CO. 100 HALL AVE.
CARROLLTON, OHIO IN CANADA: Safety Supply Co., Toronto, Ont.

BREVITY—Identify by IEN - 5356 If you write the maker

Phillips NATIONALLY APPROVED
EXCELSIOR STORAGE CANS

ARE YOUR PROTECTION AGAINST COSTLY FIRES

Approved and Recommended by Insurance Companies, State and Municipal Authorities; meets all fire regulations.

"PHILBIN" STORAGE CANS
REDUCE YOUR FIRE HAZARD IN THE STORING OF ALL INFLAMMABLE PACKING MATERIALS

"PHILBIN" Storage Cans meet all fire insurance regulations. Construction is of heavy gauge steel. Fusible links allow air tight cover to close in case of fire, and also permits cover to remain open leaving both hands free to work within can. Ideal for storage of rags, paper, paint, straw, and all packing materials.

Can pictured above with fusible links—$29.00 F.O.B. Chicago. Furnished with casters if so desired at slight additional cost.

PHILLIPS MANUFACTURING COMPANY
3475 Touhy Avenue • Chicago 45, Illinois

BREVITY—Identify by IEN - 5357 If you write the maker

Superior Times

SMALL TITANIUM TUBING MAKES BIG NEWS

Titanium . . . today's youngest and most virile metal, is now available in small diameter tubing. Approximately 60% of the weight of stainless steel, Titanium tubing possesses an unusual combination of mechanical and physical properties. WELDRAWN* Titanium tubing, of commercial purity or better, has for many months been in limited production at Superior. Sizes now being drawn range from ¼" O.D. to 1¼" O.D. with a maximum wall of .083". For technical information about properties and applications write for Data Memorandum #10, Superior Tube Company, 2016 Germantown Avenue, Norristown, Pennsylvania.

Superior
THE BIG NAME IN SMALL TUBING

All analyses .010" to ¼" O.D.
Certain analyses (.035" max. wall) up to 1¼" O.D.

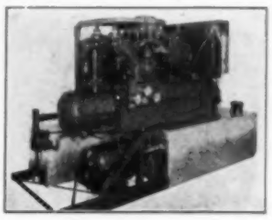
*Reg. U.S. Trade Mark — Superior Tube Co.

West Coast: Pacific Tube Company
3710 Smithway Street, Los Angeles, California • UNderhill 0-1331

BREVITY—Identify by IEN - 5358 If you write the maker

REFRIGERATING . . Compressor and equipment for process cooling

Source: MAYER REFRIGERATING ENGINEERS INC.
P. O. Box 6-A, Rutherford, N. J.



Chil-Er designates a new self-contained assembly of refrigerant compressor and its associated equipment as well as a return tank and circulating pump for the heat-exchange fluid which can be either water or brine. The assembly illustrated, Model 5-W, rates 30 ton of refrigerating capacity. It employs a 30-hp. compressor motor, a 7½-hp. circulating-pump motor. It handles 125 gpm. of water chilled to 46 deg. F. on a 120-ft. head. It is skid mounted with overall dimensions at 96 by 40 by 72 inches. Weight is 5,000 pounds.

Eight sizes in the line have refrigerating capacities between 3 and 150 ton. They are suited for use with cooling towers, spray ponds and will handle water from any suitable source. They can be connected to water-cooled mill and calender rolls, plastic injection-molding dies, water for air conditioning. They will hold down temperature in hydraulic installations, in industrial processes and can be used to remove heat from concrete in the process of curing. Control centers at a push-button station. Operation can be started immediately following completion of connection to water and power lines.

BREVITY—Identify by IEN - 5359 If you write the maker

TESTING . . Oscilloscope for laboratory and inspection uses

Source: SIMPSON ELECTRIC CO.
5202 W. Kinzie St., Chicago 44, Ill.

Bench space measuring approximately 9 by 8 in. is sufficient to mount this new Model-476 Mirroscope oscilloscope. The small space is made possible by mounting the 5-in. cathode-ray tube in vertical position and by employing a mirror mounting in the hinged adjustable cover at the top of the cabinet to bring the viewing surface at eye level on a bench of normal height. The mirror and wing sides at the top fold into the housing when the instrument is not in use. Weight is 24 lb. and list price is about $180. A high-frequency crystal probe adds $7.50.

Horizontal trace expansion is about 4 times the tube diameter to make it possible to examine small portions of a response pattern in fine detail. Linear-sweep frequency is continuously adjustable in five overlapping ranges between 15 and 60,000 cycles. Internal, external or line-frequency synchronization with variable amplitude is available. Vertical-amplifier frequency response is within 3 db. from 20 to 300,000 cycles. It is usable to 4 megacycles. Square-wave slant and over-shoot is within 5 per cent of amplitude.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5360 If you write the maker

More light on the working area with no added line load . . .

LUSTRA REFLECTOR LAMPS

LUSTRA REFLECTOR LAMPS have sealed-in reflector linings of pure silver . . . with filaments at proper focal center to project more light exactly where needed. Costly reflector maintenance is abolished because reflectors can't tarnish, get soiled . . . never need cleaning. And watt for watt of current consumption, Lustra Reflector Lamps deliver more *usable* light.

Lustra Reflector Lamps come in a complete choice of sizes and wattages . . . and with beam patterns ranging from medium concentrated to very wide. For superior lighting and longer lamp life, send for full information and sample lamps. Lustra Corporation, Dept. P-5, 36 Washington Street, Brooklyn 1, New York.

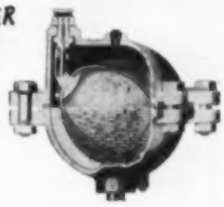
Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

BREVITY—Identify by IEN - 5361 If you write the maker

GET RID OF AIR ACCUMULATIONS IN PIPE LINES...

A BIG TROUBLE SAVER THAT COSTS YOU LITTLE!



When air lodges at high spots in pipe lines, it reduces the effective area of the pipe, creates a friction head, lowers pumping capacity, and may result in serious water hammer!

Simplex Air Release Valves bring you a sure, efficient cure for these difficulties . . . venting air *automatically* before it can cause damage. And you pay for a standard valve—

The Simplex Air Valve is easily installed . . . positive in action . . . ample in capacity. Standard valves for pressures up to 250 p.s.i. . . . special valves for pressures up to 800 p.s.i. Thousands have been in successful use for over 30 years.

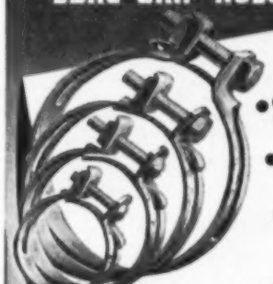
Write for free bulletin to Simplex Valve & Meter Co., Dept. 5, 6717 Upland Street, Philadelphia 42, Pa.

IT'S SIMPLEX IT'S ACCURATE

SIMPLEX
VALVE AND METER COMPANY

BREVITY—Identify by IEN - 5362 If you write the maker

CLANCY
SURE-GRIP HOSE CLAMPS

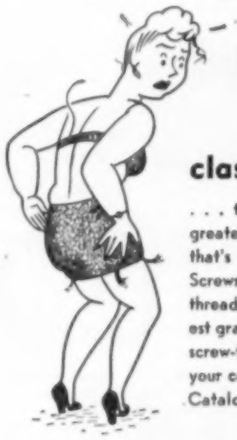


• CAN BE REUSED
• HEAVY STEEL
• PERFECT CIRCLE

Clancy clamps grip evenly, hold any pressure the hose stands. Each part separately galvanized . . . no raw edges, won't rust. Sure-Grips keep their shape, can be removed and reused. For air, gas, water or steam. Every size to fit foreign or domestic hose. Write for prices.

J. R. CLANCY INC.
1004 W. Belden Ave.
SYRACUSE 4, N. Y.

BREVITY—Identify by IEN - 5363 If you write the maker



UNBRAKO®
has a class 3 fit, too

. . . the closer the fit the greater the holding power, that's why all UNBRAKO Screws are made to #3 thread tolerance—the highest grade of interchangeable screw-thread work. Write for your copy of the UNBRAKO Catalog.

UNBRAKO Knurled Point Self-Locking Socket Set Screw.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 5364 if you write the maker

IMPORTANT DATA ON

UNIVERSAL *Flexible* METAL HOSE

for conveyance of gases, liquids, semi-solids, dust, etc.—for moisture-proof armored conduit and control casings—and many other applications.

Write for CATALOG U-101 — Just Published

UNIVERSAL METAL HOSE CO.
2131 South Kedzie Avenue Chicago 23, Illinois

BREVITY—Identify by IEN - 5365 if you write the maker

Powermaster
Fully Automatic
STEAM GENERATORS
AND HOT WATER BOILER UNITS

15 to 500 HP.—15 to 200 p.s.i.—for light oil, heavy oil, gas and gas/oil firing.

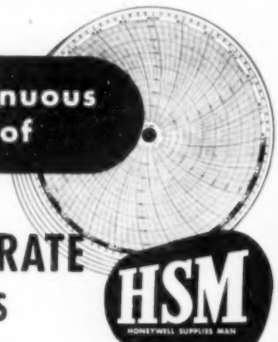
- SIMPLIFIED INSTALLATION
- SAVES PLANT SPACE
- REDUCES FUEL COSTS
- HOSPITAL-CLEAN OPERATION
- AUTOMATIC SAFETY PLUS
- EASY BOILER MAINTENANCE
- SAVES MAN-HOURS DAILY

Write For Bulletin

ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa. Established 1885

BREVITY—Identify by IEN - 5366 if you write the maker

a continuous supply of



ACCURATE CHARTS

HSM HONEYWELL SUPPLIES MAN

. . . through your Honeywell Supplies Man

WISE buyers benefit from the provisions of the HSM Plan for all instrument accessories.

In the case of charts, the benefit is two-fold. (1) A continuous supply of charts means greater recording accuracy . . . eliminates the opportunity for damage and shrinkage during long storage of large stocks. (2) Planned and scheduled purchasing, under a blanket agreement, adds convenience and saves money. Both are available through your local Honeywell Supplies Man. He is as near as your phone.

Stocks maintained in Philadelphia, Cleveland, Chicago, Houston, Los Angeles and San Francisco. MINNEAPOLIS-HONEYWELL REGULATOR Co., *Industrial Division*, 4466 Wayne Ave., Philadelphia 44, Pa.

Honeywell BROWN INSTRUMENTS

BREVITY—Identify by IEN - 5367 if you write the maker

SIGNALING . . Smoke detector indicates smoke in plane compartment

Source: WALTER KIDDE & CO.
673-77 Main St., Belleville 9, N. J.

Black light instrument provides a new means to signal the presence of smoke in an airplane compartment. It mounts on an instrument board, connects by tubing to critical compartments and includes a means to draw air through the tubing to the instrument. If the air contains a small trace of smoke it will reflect the light beam and this will show through one of the two viewing windows as a bright streak. Both windows will remain black if there is no smoke in the air.

Moving a small lever opens a shutter and permits light from the black-light lamp to illuminate a small amber button which will glow as long as the light circuit is closed and the light is in good working order. The unit is assembled in a housing measuring 3¼ by 6½ by 3¼ inches.

BREVITY—Identify by IEN - 5368 if you write the maker

TUMBLING . . Motor driven barrel for finishing, operates submerged

Source: ALMCO DIVISION
229-33 E. Clark St., Dept. I, Albert Lea, Minn.

Cushioning effect of liquid, in which this new Model SB-10 tumbling barrel is rotated, softens impact between the work parts in the barrel. Nicking and scratching of large work or parts made of soft metals are minimized. As in other types of the company's Supersheen Submerged Finishing equipment, the drum is loaded with work parts and abrasive chips or metal shapes and various liquid compounds are used in the tank for burnishing, polishing, cleaning, descaling.

BREVITY—Identify by IEN - 5369 if you write the maker

DEFENSE PRODUCTION . . Book of methods reprints articles on ordnance production operations

Industrial Press
148 Lafayette St., New York 13, N. Y.

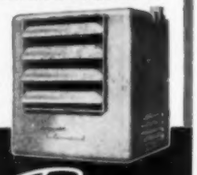
Manufacturing methods on rifles, machine guns, bullets, shells, guns, bombs, tanks are described in new 542-page book, "Ordnance Production Methods", list price $10. Articles originally published in "Machinery" are grouped by subject in 10 sections to serve as a reference guide to established methods.

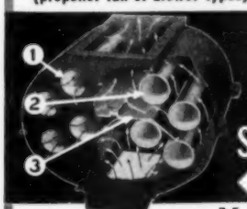
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5370 if you write the maker

Mueller Climatrol

space-saving **gas-fired unit heaters**
(propeller fan or blower types)





Proof of SUPERIORITY is here

1. One-piece all-welded steel heat exchanger — no tie-rod, bolted, gasketed, or slip joints to leak, separate or crack.
2. Uniform air flow and heat distribution — burner extends under entire heat exchanger; insures maximum fuel economy.
3. High Crown Sheet — no flame impingement, no hot spots.

MUELLER gives you a unit to fit every application — 4 sizes: 60,000, 90,000, 120,000 and 150,000 Btu input capacities. A.G.A. and Underwriters' Laboratories approved — with design features that assure longer life, greater economy. These units are *shipped assembled and pre-wired* for quick, low-cost installation. E-44

Write for full details —

L. J. Mueller Furnace Co.
2040F W. Oklahoma Ave.
MILWAUKEE 15, WISCONSIN

BREVITY—Identify by IEN - 5371 if you write the maker

KUSHION-TORK
WHAT IT WILL DO FOR YOU

The Cushion Torque of Kanti-Lever Couplings absorbs the hammer blows of sudden or reversing loads and dampens the torsional and radial vibration that cause wear, fatigue and sometimes failure of Motors, Speed Reducers, Ball Bearings, and productive machinery. No other coupling is like the Kanti-Lever: It has a circular series of laminated Cantilevers of 200,000 lb. steel, operating in slots, the tapered sides of which automatically stiffen the Cantilevers under increased overloads. Special end-play up to four inches is possible without end thrust. The outer periphery of the Kanti-Lever is available as a brake drum for quick-stopping or reversing machinery.
Send for Bulletin No. 28-N.

Kanti-Lever Couplings

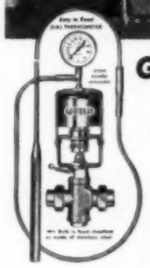
4,000,000 h. p. in Use

MFGRS. OF SECTIONAL STOCK RACKS

BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

BREVITY—Identify by IEN - 5372 if you write the maker

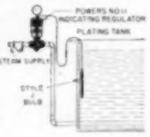
Below: Official U. S. Navy Photograph Michelson Laboratory Naval Ordnance Test Station Inyokern, Cal.



Get BETTER Control SAVE LABOR
Reduce Costs with—
POWERS

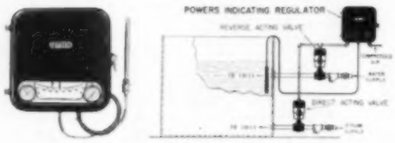
No. 11 TEMPERATURE REGULATORS

Most of the more than 30 steam heated tanks used in the Navy's modern shops shown above are automatically controlled by Powers regulators. They maintain a constant temperature, end losses caused by OVER-heating, help reduce rough plating, buffing time and decomposition of plating solutions.



Easy to Install—self-operating, have an easy to read 4" dial thermometer which shows temperature of plating solution under control. They are available with either lead sheathed or stainless steel bulbs. Bulletin 329 gives full information.

Compressed Air Operated Indicating Regulator



POWERS Series 100 Regulator

Accurately Controls heating and cooling of plating solutions

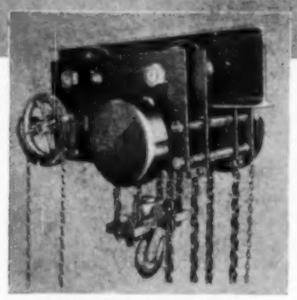
Powers has the most complete line of temperature regulators made for metal finishing operations. Contact our nearest office for further information, or

Write for Circular PLN

THE POWERS REGULATOR COMPANY
2737 Greenview Avenue, Chicago 14, Illinois (PLO)
Established 1891 • Offices Over 50 Cities • See Your Phone Book

BREVITY—Identify by IEN - 5374 if you write the maker

CHESTER HOISTS CAN S·T·R·E·T·C·H or SQUEEZE to meet your needs!



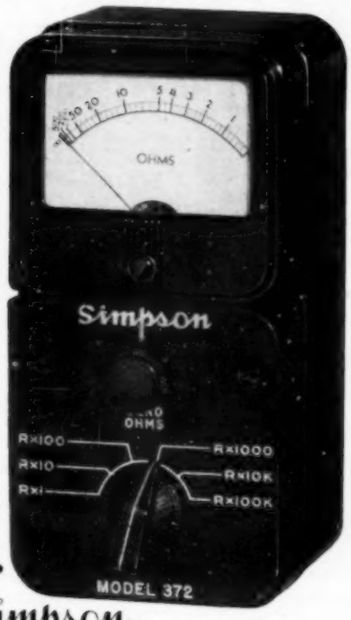
LOW HEAD ROOM HOIST

As an example, for existing structures with low head room, or for reducing costs of new construction by permitting lower ceilings, this low head room trolley hoist may solve the problem. Fast service available on these and other types, in sizes from 1½ to 24 tons. Write for complete catalog.

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

IEN-1

BREVITY—Identify by IEN - 5375 if you write the maker



Simpson

multi-purpose MICROTESTERS STAY ACCURATE!

These instruments are 3"x5⅞"x2½"—weigh 1¼ to 1½ lbs.—shipping weight, 3 lbs. Prices shown are dealer's net. Except where otherwise indicated test leads with prods or test leads with alligator clips and insulated sleeves are $1.25 extra.

AC AMMETER	Model 370	Price $19.95
AC VOLTMETER	Model 371	Price $18.40
OHMMETER	Model 372 with Test Leads	Price $25.50
DC MILLIAMMETER	Model 373	Price $19.95
DC MICROAMMETER	Model 374	Price $23.00
DC AMMETER	Model 375	Price $19.95
AC VOLTMETER	Model 376	Price $19.95
DC VOLTMETER	Model 377	Price $19.95
AC MILLIAMMETER	Model 378	Price $22.60
BATTERY TESTER	Model 379 with Test Leads and Operator's Manual	Price $23.70

BURTON BROWNE ADVERTISING

Simpson ELECTRIC COMPANY
5200 W. Kinzie Street • Chicago 44, Illinois
Phone: COlumbus 1-1221
In Canada: Bach-Simpson, Ltd., London, Ont.
World's Largest Makers of Electronic Test Equipment

BREVITY—Identify by IEN - 5377 if you write the maker

WOOD WORKING . . Radial arm saw, two sizes take 12 and 14 in. blades

Source: DELTA POWER TOOL DIVISION
614 E. Vienna Ave., Milwaukee 1, Wis.

Model 40-B designates new radial-arm saw in the company's line of wood-working equipment. It is available in a 2-hp. single-phase assembly for operating on 110/220-volt ac. in which case it takes a 12-in. saw blade and will cut square through 3-in. dressed lumber. It is made also in a 3-hp. size for operation on three-phase 110/220-volt ac. to take a 14-in. saw blade and to cut through 4-in. dressed lumber.

Three types include a portable unit with hand grips, a mobile unit mounted on a rubber-tired trailer and a stationary assembly as shown in the illustration. The saw blade has 19 in. of travel on the arm. It can be set to rip to the center of stock 50 in. in width. The double 360-deg. radial action permits universal positioning for any type of cut. Locating latches are provided at 30, 45, 50 and 90-deg. positions. Assembly is on a cabinet base providing protected space back of a hinged door for tools and accessories.

BREVITY—Identify by IEN - 5378 if you write the maker

CLEANING . . Organic compound to clear drains and clean porcelain

Source: AGAVA PRODUCTS INC.
32-36 Exchange Place, Jersey City 2, N. J.

Harmless to skin and clothing

Clear-A-Drain is a new colloidal organic compound supplied in quart and gallon cans for addition in small amount to a drain that has become clogged. The liquid is allowed to stand for a few hours during which time it works itself into and loosens soluble obstructions so they can be washed away. It will remove stains from porcelain fixtures.

BREVITY—Identify by IEN - 5379 if you write the maker

VIBRATING . . Pneumatic unit promotes flow in bins, hoppers, chutes

Source: SPO INC.
6452 Grand Division Ave., Cleveland 25, Ohio

Vibrating axis can be positioned parallel or at right angles to the direction of material flow with this new Series-S2 vibrator. The unit encloses a 1½-in. piston and measures about 6 in. in overall length. Height is 3 inches. The base is ⅝ in. in thickness. The body is made of steel and is secured by bolts through the base. Air consumption is 9½ cfm. on 80-lb. line pressure supplied at a threaded connection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 5380 if you write the maker

MERCOID

AUTOMATIC CONTROLS FOR HEATING, AIR CONDITIONING, REFRIGERATION AND VARIOUS INDUSTRIAL APPLICATIONS

THE ONLY 100% MERCURY SWITCH EQUIPPED CONTROLS

The distinguishing feature of Mercoid Controls is the exclusive use of Mercoid hermetically sealed mercury switches. These switches are not subject to dust, dirt or corrosion, thereby assuring better performance and longer control life. The items shown below are but a few miscellaneous items. See Catalog No. 700 for the complete line.

If you have a problem involving the automatic control of pressure, temperature, liquid level, mechanical operations, etc., it will pay you to consult Mercoid's engineering staff — always at your service.

Manufacturers of Dependable Automatic Controls for Over A Quarter of A Century

THE MERCOID CORPORATION · 4223 BELMONT AVE. CHICAGO 41, ILL.

BREVITY—Identify by IEN - 5381 if you write the maker

Prompt Deliveries... of Motch & Merryweather SLITTING and SLOTTING SAWS if you order *NOW!*

* * *

A complete range of sizes available at your local dealer or from our plant in Cleveland.

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING • CLEVELAND 13, OHIO
COMMAND OUR UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

BREVITY—Identify by IEN - 5382 if you write the maker

You'll Find Constructive Answers in Structural Plastics!

Here are just a few of the many things you can now form from reinforced structural plastics made with BAKELITE Polyester Resins—high-strength radomes . . . boat hulls . . . refrigerator panels . . . housings . . . tote boxes . . . luggage.

Structural plastic products provide excellent resistance to moisture, many chemicals, heat and cold. They do not require costly molds, high heat, or high pressures for their forming.

BAKELITE Polyester Resins were developed especially for contact and low-pressure molding, laminating and casting. They come in several grades to meet the demands of specific products. For example one type was developed for high frequency insulation requirements (9375 megacycles per second).

Engineers and designers interested in the high strength and durability of structural plastics can obtain further information on BAKELITE Polyester Resins by writing Dept. CB-14.

BAKELITE TRADE-MARK
POLYESTER RESINS

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
30 East 42nd Street, New York 17, N. Y.

BREVITY—Identify by IEN - 5384 If you write the maker

REEVES QUALITY FABRICS

These famous fabrics are good-looking and stay that way, washing after washing, because they're made of fine *combed* cottons — Sanforized* and vat-dyed in colors fast to sun, water and perspiration.

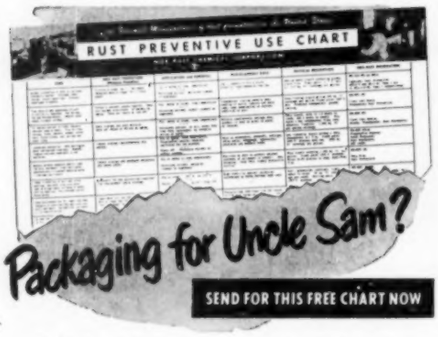
Write for full information.

*Residual shrinkage less than 1%

Reeves PARADE TWILL SANFORIZED · Reeves FINGERTIP POPLIN SANFORIZED · Reeves ARMY TWILL

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

BREVITY—Identify by IEN - 5385 If you write the maker



Here's the solution to your government packaging problems. This new NOX-RUST chart gives you Federal rust preventive specifications and a complete list of NOX-RUST products conforming to each. You will find products to meet Military, Joint Army-Navy, Army, Navy, Air Force and Ordnance requirements. It's all here in handy chart form that shows the uses, application and removal, physical description, protection afforded and miscellaneous data on frequently needed products. If you are packaging for Uncle Sam, you need this chart. Write for it today. It's yours as part of NOX-RUST'S service to industry.

NOX-RUST CHEMICAL CORPORATION
Rust Prevention Division
2467 South Halsted Street • Chicago 8, Illinois
Philadelphia • Baltimore • Detroit • San Francisco

BREVITY—Identify by IEN - 5386 If you write the maker

This TUTHILL
Automatic Reversing Pump helps answer design problems

If your problem involves driving the pump from a reversing shaft, Tuthill Model R is a practical answer. This automatic reversing pump delivers from the same port regardless of direction of shaft rotation. Its flexibility of performance makes it ideal for lubrication and coolant service, particularly wherever the ultimate direction of shaft rotation is not known. Capacities from 1 to 200 g.p.m. and pressures up to 100 p.s.i.

Write for Tuthill Reversing Pump Bulletin

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

MAY 1951 INDEX TO ALL PRODUCTS

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our sixteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

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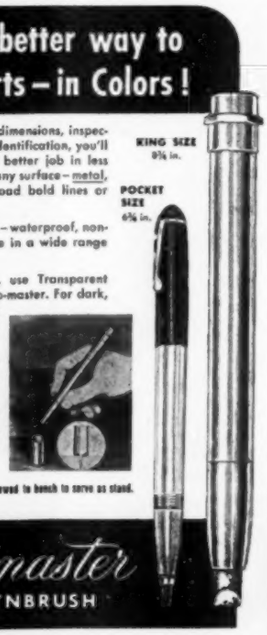

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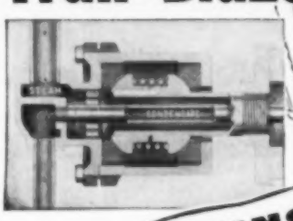

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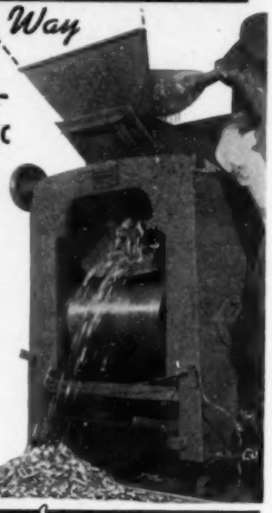

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"I WISH I HAD"

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

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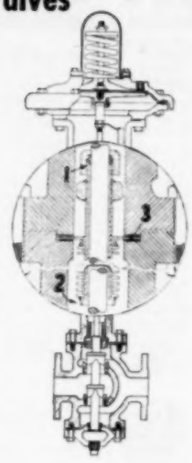

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1. Stainless steel ferrule and locknut make positive seal between stem and liner guide.
2. Bottom ends of liner and bellows seam-welded.
3. Top of bellows welded to flange that is gasket-sealed between valve bonnet and bellows housing.

FOXBORO INSTRUMENTATION

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